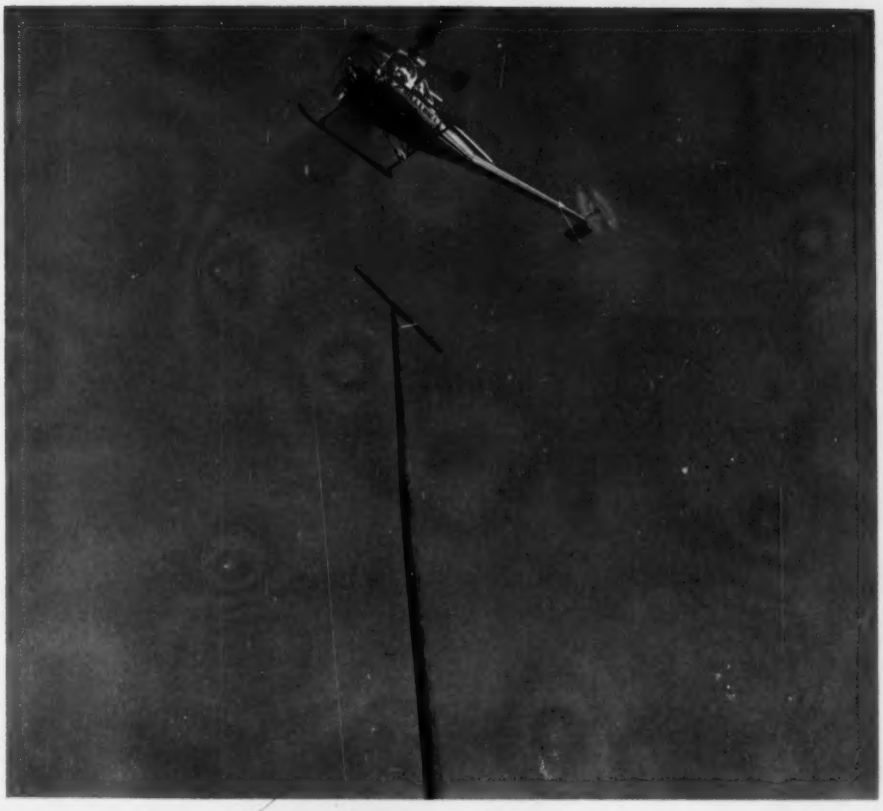
NOVEMBER 21, 1959
VOL. 157 — NO. 21

Telephony

THE JOURNAL OF THE
TELEPHONE INDUSTRY
SINCE 1901



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Guaranteed Circulation This Issue
13,400 of Which 12,849 Is Paid

UP AND OVER

Many utility companies are exploring the use of helicopter transportation in their expansion and construction programs. Here a helicopter is delivering fully-fixtured 850-lb. pole.

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

Revenue immediately increased 51 per cent at this booth in Platea, Pa., when General Telephone replaced the old style unit with an Alcoa outdoor installation, proving that customers definitely prefer aluminum's brighter, cleaner appearance.

"REVENUE OFTEN INCREASES 50% OR MORE WHEN WE SWITCH TO ALCOA BOOTHS,"

Reports T. J. Schultz, General Commercial Manager, General Telephone Company of Pennsylvania

"Since 1955 we have purchased 177 Alcoa outdoor booths and every one of them has more than paid its way in increased revenue, lower maintenance expense and reduced vandalism damage," says Mr. Schultz.

"An example of the way booths of Alcoa Aluminum boost revenue is this installation in Platea, Pa. Ever since we switched from an old style booth to an aluminum unit and moved the installation a few feet closer to the highway, revenue has shown an average increase of 51 per cent a month.

"Upkeep costs have also gone down since we started installing aluminum booths. Because they are corrosion resistant, occasional washing and sweeping is all that is needed to keep them clean and attractive. And vandalism, too, has been greatly reduced . . . thanks to the excellent lighting and sturdy construction of Alcoa booths."

Like many other companies, General Telephone of Pennsylvania has found Alcoa outdoor booths a sound investment and a sure road to an immediate increase in revenue. Why not find out how Alcoa booths can do the same for you? Write for free brochure and ask your jobber to show you the Alcoa Goodwill Kit—the free promotional package to help you merchandise the new booth to your customers. Aluminum Company of America, 1720-L Alcoa Building, Pittsburgh 19, Pa.

Maintenance costs went down for General Telephone of Pennsylvania when it began using outdoor booths of Alcoa® Aluminum. Occasional sweeping and washing with soap and water is all that is needed to keep them smart and new looking.

"People like the lighting in Alcoa booths," says Mr. Schultz. "Excellent lighting and sturdy construction give a feeling of safety at night!"

Your Guide to the Best in Aluminum Value

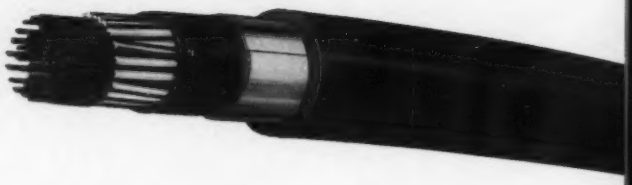
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

For exciting drama watch "Alcoa Presents" every Tuesday, ABC-TV, and the Emmy Award winning "Alcoa Theatre" alternate Mondays, NBC-TV

TELEPHONE
TELEPHONE

AERIAL AND DUCT TYPE



DIRECT BURIAL TYPE

PHELPS DODGE TELEPHONE WIRE

THE "MINE-TO-MARKET" QUALITY

Exchange Area Telephone Cable

This Phelps Dodge cable, designed for aerial, duct and direct burial use, has a lightweight, thermoplastic construction—including fully color coded conductors—that makes handling easier and cuts installation time.

Exceptionally fine electrical properties and superior resistance to moisture, weathering and abrasion are assured through the use of highest grade materials, skilled workmanship and manufacturing experience.

The controlled craftsmanship and high quality of Exchange Area Telephone Cable are typical of the entire line of Phelps Dodge telephone wires and cables including:

- Self-Supporting Telephone Cable
- Rural and Urban Distribution Telephone Wire
- Interior Telephone Cable
- Rubber-Insulated Lead-Sheathed Telephone Cable
- Paper-Insulated Lead-Sheathed Telephone Cable
- PD-Tel Wire

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PD

FLASHES AND PLUGS

SOOTHING THE SAVAGE . . . It would be impossible to say how many times a telephone call has enlightened, relieved, or soothed a caller, because the voice at the other end of the line had the right answer. The following items from *Milwaukee Journal*, Associated Press, and United Press International newspaper items illustrate the key role of the telephone in stressful situations.

When a gas company customer, shocked at a bill for $129, telephoned the gas company, she was in no mood to be put off.

"Just move the decimal point a notch to the left," said a controlled voice—"our automatic billing machine must have goofed."

Then, there was the lady given to dreams about emergencies. She dreamed her house was on fire, and promptly telephoned the fire department. When the firemen arrived, they found that they had chased a dream—and all at 1:25 a.m.! What they said can only be imagined.

When a motorist was stopped by a motor cycle policeman, the motorist heard a woman's voice on the policeman's radio giving instructions. He said, "That must be as bad as having your wife around."

It turned out, the voice *was* the policeman's wife's—she is an operator at headquarters. The sequel to the motorist's comment is unknown.

At Chicopee, Mass., workmen didn't bother to see if there was anyone in the Falls Theater before they boarded up the windows and doors. Manager Lydia Allen was left inside.

Marooned, but not desperate, because the telephone was not yet disconnected, she telephoned her way out. Doubtless, choice words accompanied her pleas for rescue.

•

SPEAKERPHONE NEXT. In Jonesboro, Ark., a man called a Southwestern Bell Telephone Co. service representative, Mrs. Bettye McDaniel, complaining that his wife used the telephone too much.

She was a seamstress and with telephone usage rising, production was falling.

Mrs. McDaniel offered the perfect solution, an extension with a headset instead of a regular instrument. So sewing goes on—at a greater rate than ever and talking is booming too.

Now, Southwestern Bell, according to its employe magazine, *Southwestern Telephone News*, is wondering whether it would be possible to sell the woman and her husband a color headset.

•

BOUNTY HUNTER. The city police sent out pictures of an escaped desperado in six different poses.

A local constable soon called in and reported, "I've captured five and I'm now on the trail of the sixth."

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Dept. of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

November 21, 1959

CONTENTS

IN THE NATION'S CAPITAL 19
By Francis X. Welch

ARMY COMMUNICATIONS AND THE CIVILIAN TELEPHONE INDUSTRY 21
By Ray Blain

JUST HOW GOOD IS YOUR POLITICAL IQ? 23

PRESTIGE: ASSET AND INCENTIVE 24
By Ben Smith

THE PLANT MAN'S NOTEBOOK 26
By Ray Blain

PLANT MAN'S QUIZ 27
By Ray Blain

WHEATSTONE BRIDGE MEASUREMENTS—Part 2 30
By John A. Bracken

REA CELEBRATES TENTH ANNIVERSARY OF TELEPHONE PROGRAM 34

THANKSGIVING AGAIN 36
By Mayme Workman

COURTS AND COMMISSIONS 40

NEWS ON NEW PRODUCTS 50

H. D. FARGO JR., *President and Director of Advertising* • A. J. STULTS, *Vice President and Advertising Manager* • R. C. RENO, *Vice President and Editor* • DAN S. FARGO, *Vice President and Managing Editor* • DIANNE P. DRUCKER, *Associate Editor* • HELEN HARDIN, *Associate Editor* • FRANCIS X. WELCH, *Washington Editor* • RAY BLAIN, *Technical Editorial Director* • HAROLD B. McKAY, *Electronics Editor* • MAYME WORKMAN, *Traffic Editor* • VIVIAN RYDEN, *Circulation Manager.*

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21.2 miles per gallon of gasoline is only a part of the fine record for savings With 10,000 miles now on each of their Larks, the Motor Vehicle Superintendent of this Telephone and Telegraph company reports: "Oil consumption is negligible. No repairs, no parts purchased as yet." Larks are in demand from his car pool—"Drivers like their ease of handling in traffic." While we cannot name this company, the actual testimonial is in our files at South Bend—with many others.

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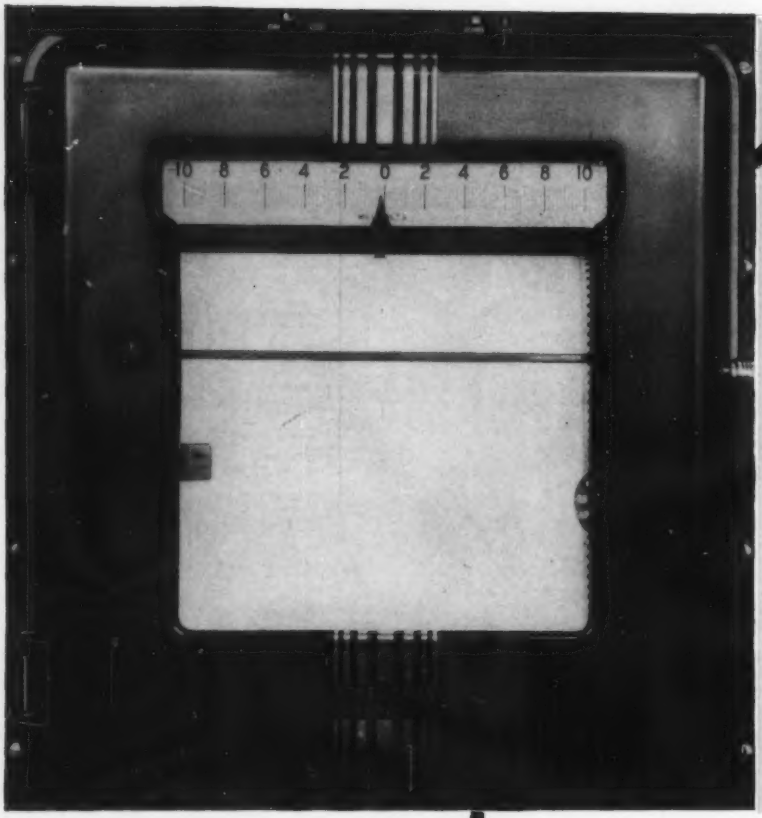

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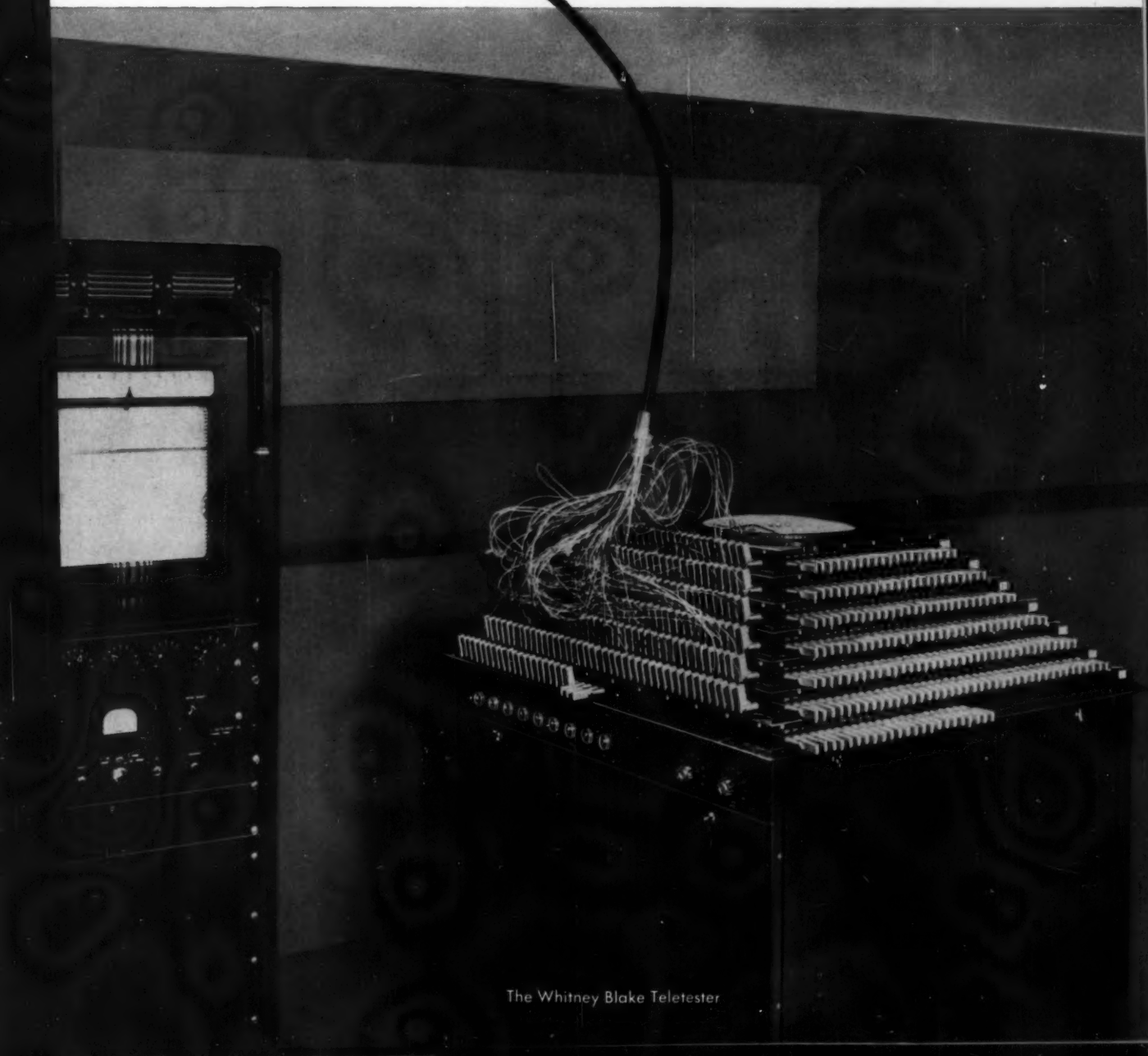
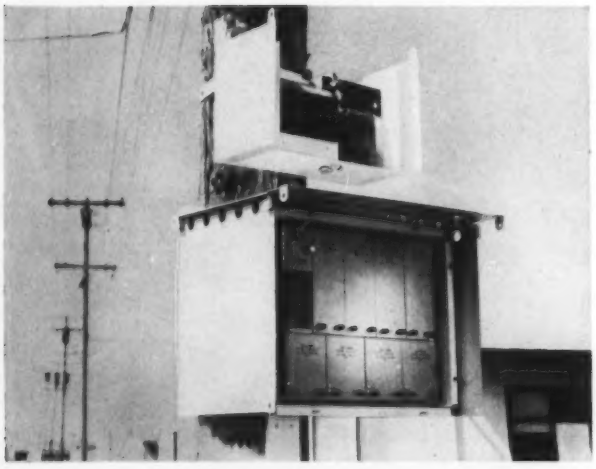


The Whitney Blake Teletester

DOUBLE CARRIER SYSTEM WITH KELLOGG'S *exclusive* NEW REPEATER



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Only Kellogg's K-31 makes rural subscriber carrier so economical and practical for independents. With Kellogg's exclusive repeaters you substantially increase the length of line over which the K-31 System operates—and at amazingly low cost. Actually, you can *double* K-31 carrier system mileage with one low-cost Kellogg repeater, *triple* mileage with two repeaters!

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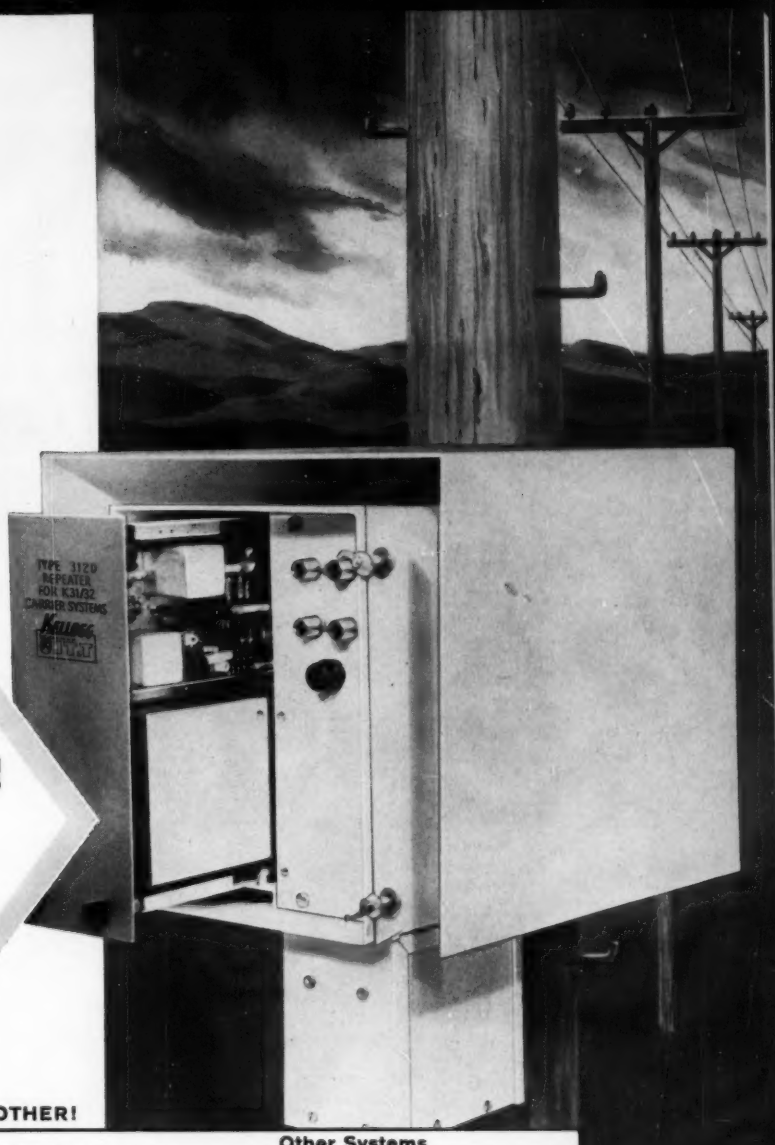
Automatic Regulation! Maintains a constant output level regardless of line loss variations due to changing weather conditions.

Completely transistorized! Another Kellogg exclusive! Guarantees toll quality performance.

Important! The *complete* price for the entire K-31 Carrier System, ("no extras") is less than any other comparable system on the market!

YOUR MILEAGE



■ **Double carrier mileage with one low cost repeater!**

■ **Triple carrier mileage with two repeaters!**

COMPARE KELLOGG K-31 CARRIER WITH ANY OTHER!

		KELLOGG K-31	Other Systems			
			A	B	C	D
√	Number of channels	8	5	5	5	10
√	Repeaters	yes	no	no	no	no
√	Built-in compandors	yes	no	opt.	no	no
√	Automatic regulation device	yes	yes	yes	no	no
√	Standard emergency power	yes	no	no	no	no
√	Plug-in components	yes	no	yes	no	yes
√	Power consumption (watts)	2.5	30	14	25	35
√	Transistorized printed circuits	yes	no	yes	no	no
√	Transistorized power supply sub. term.	yes	no	no	no	no

Remember Kellogg's K-32 Open Wire Trunk Carrier! Only One Relay on Either End!

Call your Kellogg representative and get full details on telephony's most effective and economical *carrier-system. Exclusive manufacturers of K-31 and K-32 Carrier Systems.*

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The easier and faster you make a lineman's job, the more time and money you save on installation, service and maintenance. This was part of the thinking behind the development of Anaconda Alpeth telephone cable.

Test splicing is costly and time-consuming, and installation test pinholes in polyethylene are almost certain to produce failure in time. Such failures mean costly maintenance.

But—new color-coded Anaconda Alpeth eliminates test splicing and broken insulation, maintaining complete moisture protection, saving installation time and labor.

You get long-range operating advantages too

Every time you add a new station, you get every installation advantage over and over again.

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The longitudinally applied aluminum shield offers you all these extras—a virtually noise-free plastic cable . . . an excellent path to ground for induced lightning and power surges . . . an effective shield from outside interference . . . low electrical resistance . . . provides a shield with electrical characteristics which are virtually unchanged with time.

The high molecular-weight polyethylene jacket gives outstanding aging and weathering characteristics in addition to high moisture- and corrosion-resistance.

These then are some of the reasons why you start saving—and keep saving—as soon as you start installing lightweight Anaconda Alpeth. For more information and full technical data, write to: Anaconda Wire & Cable Company, 25 Broadway, New York, N. Y.

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FOR ANACONDA ALPETH
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For short subscriber loops and secondary toll lines use .080"-30. On toll lines and long subscriber loops install .104"-40.

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Reinforce the conductor over the entire length of the tie, combat fatigue, and assure uniformity of construction. These preformed ties are strong, nonrusting, simple in design, easy and inexpensive to apply. Copperweld Grip-Flex Ties are made for line wire sizes from .080" to .165".

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Maintenance and replacement end when Copperweld Type M Strand is installed.

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When the job calls for the best, leading telephone companies use Copperweld Inside Wire. It has good conductivity, pliability, and high strength to withstand frequent flexing and long duct pulls—yet the cost is low.

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For permanent grounds, dependable the year 'round, use Copperweld—the only ground rods with a thick copper covering inseparably Molten-Welded to a strong steel core. They provide stiffness for easy driving and rust resistance for long life. Copper-to-copper contacts throughout assure low resistance. For your protection, each rod is stamped "Copperweld."

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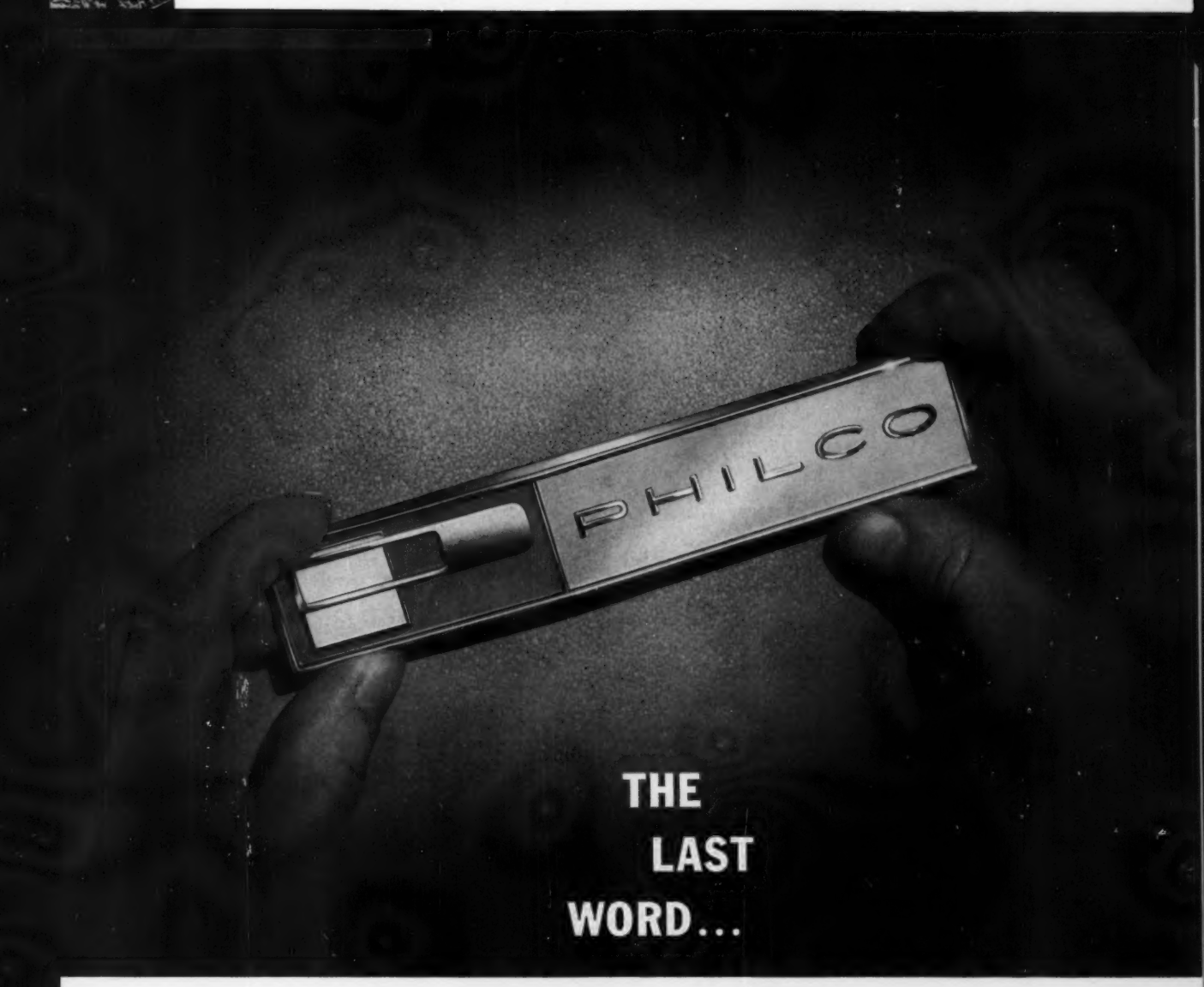

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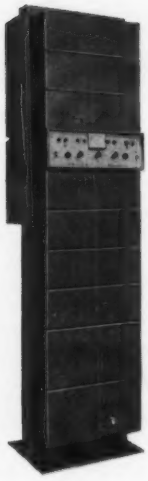

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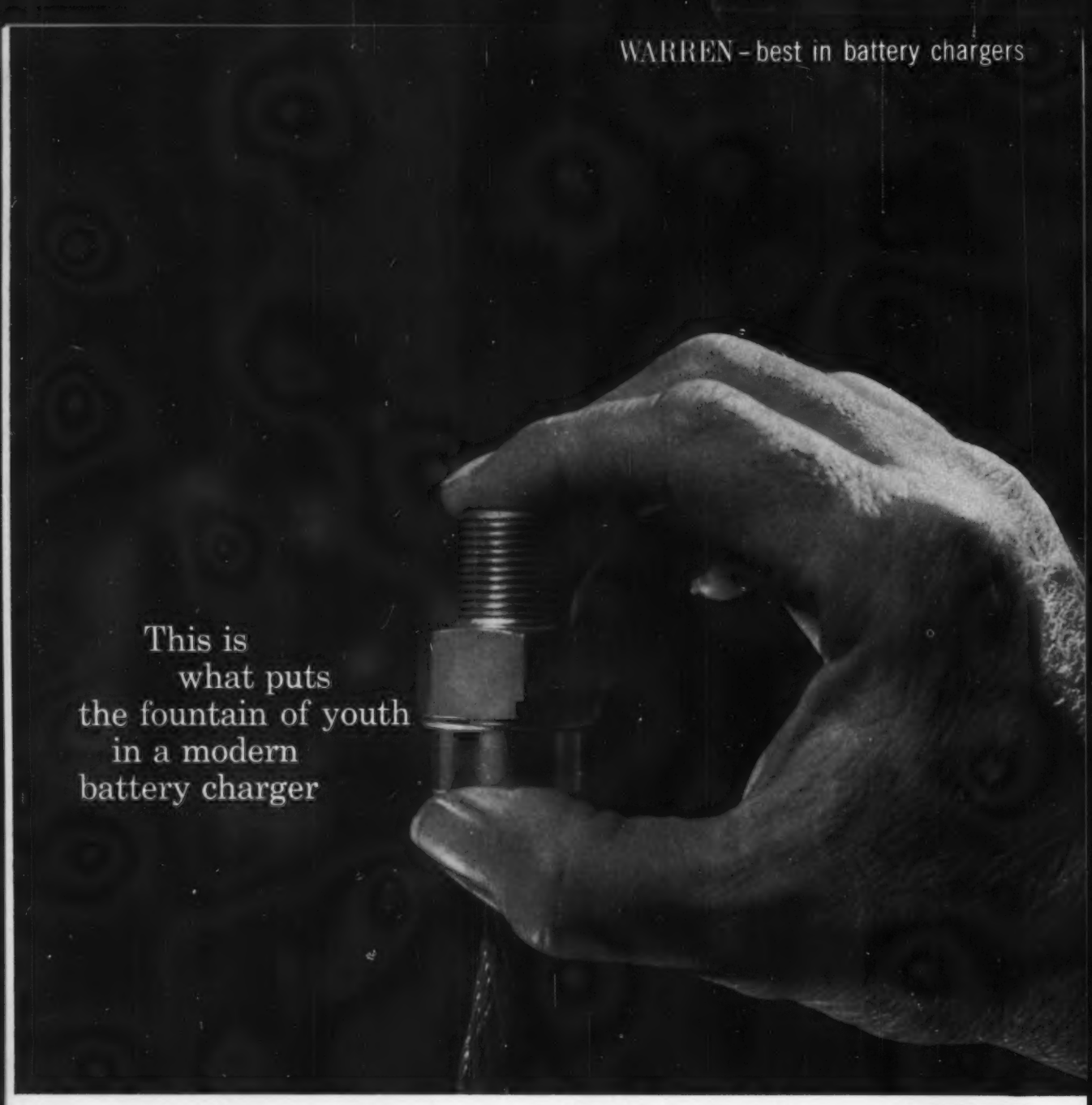

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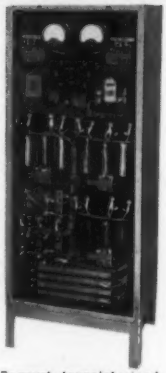
This is a silicon power rectifier — one of many new features Warren has incorporated in its complete line of battery chargers.

(We prefer to call them TFR's, or Transistor Float Rectifiers, but back to the subject).

The reason we use *silicon* (instead of say, selenium) rectifiers is that they are smaller and more efficient. They add more heart, more life to the system. They positively refuse to age, or cause anybody any trouble making adjustments or replacements.

They have, if you will, a certain *character* about them — and what it all means is that they help make possible a level of dependability and maintenance-free operation that makes the Warren TFR's unique.

Even if you're not in the market at the moment, you should find out more about Warren TFR's. You never can tell when you might be able to put the mint-fresh information we send you to very good use.



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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR
AND EDITOR, PUBLIC UTILITIES FORTNIGHTLY

The Sweet Cross of Charity . . . Chicago attorney files objection with Illinois commission to Illinois Bell's contribution to Chicago Community Fund-Red Cross Joint Appeal . . . Company meets issue head-on . . . Importance of corporate giving to charity drives emphasized in hearings . . . Case is of vital concern to all utilities in all states.

CRITICS of the public utility industries in the United States—and there are quite a few despite the best efforts of the public relations people in the field—would probably have snorted at the idea of the picture of our utility companies as knights in shining armor, or ministers of mercy. Probably a good many public utility officers would likewise be amazed, if not a little embarrassed, by any such identification.

But the plain fact is that, without anybody planning it that way, the public utilities, as well as other large business corporations in our cities, are taking over more and more of the burden of financing a number of welfare agencies. In plain words these business concerns are taking the lead in organizing and promoting the campaigns of solicitation for voluntary charitable contribution, without which these welfare agencies would have to fold up. This would mean, in view of the increasing demand for welfare services by our rapidly increasing urban centers of population, that the government would have to step in by default. And that, in turn, would mean more and more of a welfare state, financed out of involuntary tax assessments, instead of by voluntary contribution.

Perhaps it was because of the early recognition of this clear-cut eventual alternative that most business corporations, especially utility companies, have taken over the laboring oar in such campaigns as the Community Chest, Red Cross, United Givers Fund, Mercy Crusade, and similar campaigns for organized giving recently concluded under different names in all of our large cities.

Whatever the reason, you can easily check the truth of these generalizations by thinking back over the leadership in such work in your own city in recent years. Who was the head of the Community Chest in your home town—this year, or last year, or the year before that? And who took the lead in organizing the work at the division and area levels, mobilizing the volunteers, and helping out on the publicity, etc.? The chances are good that the chairman was an officer of the local telephone, gas, or electric company, or transit, or department store, or another principal industrial concern in the community. And you will find the same thing if you investigate the lower working levels of organized giving. Without the wholehearted help—not just passive cooperation—of these business managements, some of these campaigns could have collapsed. A good many of them have not done very well as it is—reflecting an increasing burden of demand put upon their resources by local welfare agencies.

It is against this background of human needs, right here in our own country, that a recent proceeding before the Illinois Commerce Commission, involving the Illinois Bell Telephone Co., assumes much more than local significance.

It seems that a Chicago attorney, one Andrew Vrtjak, objected to donations by Illinois Bell to the Chicago Community Fund-Red Cross Joint Appeal and to the use of two Illinois Bell employes assigned to assist the campaign on a "lend-lease" basis. In other words the complainant claims that the company is "overcharging its consumers by at least $290,000 . . . of its profits . . ." plus the amount paid in salaries to the two "lend-lease" employes helping the charity drive.

Now it is interesting to note that Illinois Bell did not deny the amount of these donations. On the contrary, Leslie N. Jones, general counsel for the company, told the commission at the hearings in Chicago on Nov. 9: "I will proudly admit that Illinois Bell has given $290,000 to the Community Fund-Red Cross appeal . . . and I will proudly admit that certain of our employes are assisting in this charity drive . . ."

What makes this hearing before an examiner of the Illinois Commerce Commission, William E. Helander, of importance to other telephone companies and to other utilities in other states is the fact that this is a pretty general problem.

What the Illinois commission will be called upon to decide in this case is a question of great social responsibility. For if public utility companies, such as

Illinois Bell, cannot contribute, charitable donations will be curtailed.

Of course, it might be said that the customers of Illinois Bell also make their own voluntary contributions, and many of them do. But the plain fact is that without large corporate gifts, from utilities and other forms of business enterprise, our charity drives would almost certainly fail. Viewed in this light, corporate donations are not involuntary contributions by customers of these companies. They become a form of orderly collection which would certainly have the approval of the customers if they had no other choice except to put it on their tax bill. If the latter substitute for taking care of these welfare services were to supersede voluntary charities, there would be no question about the involuntary character of the contribution. Uncle Sam and the state tax collector do not ask you whether you want to join. They send you tax forms. You join—or else!

It is not as if this disputed contribution by Illinois Bell were burdensome on the telephone subscribers. *The evidence before the Illinois commission showed that the company's 1960 pledge amounted to one cent a month per customer.* (To be exact, the annual cost per customer in Chicago was estimated at 26½ cents, which was cut more than half by the deduction of income tax credit.)

What Illinois Bell pledged was probably comparable to the pledges of other public utility companies in the Chicago area. In any event, it was certainly not much more or less than the contributions of other corporations in the five-county Chicago metropolitan area. There was evidence on this. Leo J. Shapiro, president of a Chicago survey firm, testified that a comparison of Illinois Bell's contribution with 29 other firms having 5,000 or more employes and 107 companies with 1,000 to 5,000 employes showed that "the telephone company was neither ahead nor behind." Shapiro said that Illinois Bell was among 98 per cent of the area's large business companies which made such contributions. By far the greater number of them also volunteered the help of their employes.

The importance of this testimony lies in the fact that nobody questions the right of these other business corporations to contribute to charitable agencies. Why, then, should public utility companies be singled out for restriction and limitation on contributing to charity? Who would benefit by such restriction? Certainly not the orphans, crippled children, and aged, and others taken care of by these community funds. Maybe the Chicago telephone subscriber would theoretically save a penny a month on his telephone bill; but he might have to fork out a lot more if voluntary charities collapsed in Chicago and the heavy, wasteful hand of government subsidy supported by involuntary taxation took over. Indeed, the telephone subscriber is far better off under the present arrangement. Maybe the regulatory commission will take this broad liberal view.

Need for Corporate Giving

What evidence was there that the contribution of Illinois Bell is needed to the fullest extent warranted by its 1960 pledge? There was plenty of evidence presented before Examiner Helander. It came from a number of agencies and welfare people, Protestant, Catholic, and Jewish, alike. They all told the same story of increasing need.

First, there was Robert H. MacRae, executive director of the Welfare Council of Metropolitan Chicago. He said that from 1950 through 1956 there have been large increases in three fields which resulted in more work for the welfare agencies—child population, up 19 per cent; aged, up 17 per cent, and heavy immigration of people from rural areas of this country and Mexico. During this period there has been a 24 per cent increase in money from the Community Fund to these agencies. This just matched the increased cost of living in this period.

What happens if the Chicago charity drive collapses? There would result a civic crisis that might cost many times the donations involved in terms of broken homes, juvenile delinquency, and other civic ills all too prevalent in the asphalt jungles of our great cities. Mr. MacRae said:

"If our clinics didn't operate the result would be more foster homes, more juvenile delinquency, more roaming of streets, all of which would give rise to more human misery and a breakdown beyond belief . . ."

He cited other examples including the closing of 21 day nurseries since 1953. If these needs are not met by private charity agencies the result will probably "give rise to new governmental agencies."

Philip R. Clarke Sr. is the general chairman of the Community Fund-Red Cross Joint Appeal for the Chicago area. He agreed with all MacRae had to say and he stated further that corporations are expected to contribute 55 per cent (8.5 million dollars) of the $14,638,000 joint appeal goal. The rest of the money must come from individuals "and about one million of these folks are employes of the corporations" which contribute the bulk of joint appeal funds. "Lend-lease" management personnel from the largest business firms in the city are essential to the success of the campaign. If they weren't available "it certainly would be most difficult" to achieve the goal. He said it would be impossible to reach the money goal if corporations such as Illinois Bell were not allowed to contribute.

Mr. Clarke threw some light on the

(Continued on page 65)

MENTAL HEALTH IN INDUSTRY

"(A mental health forum set up by the Connecticut Mutual Life Insurance Co.) urged that companies set up mental health centers and employ psychiatrists in the same way that they now have hospital facilities and employ doctors. . . . Charles J. Zimmerman (Connecticut Life President) observed that mental disturbances were costing business and industry 'billions of dollars' annually and stated that 'it is clear that the ultimate cost of neglecting the problem of mental illness will be far greater than the cost of solving it.'

"Dr. Norman Plummer, medical director of the New York Telephone Co. noted that 'studies show clearly that high absence is related to attitudes, motivation, morale and many social and economic problems.'. . . .

"Business and industry . . . can aid . . . society by helping recognize the fact that mental illness is an illness in the same sense as is physical illness.

"This recognition, accepted fully in the professional world, is at the root of the advances that are being made in the care and treatment of the mentally ill. It is not yet, however, sufficiently a part of our total social consciousness. We have come a long way, it is true, but there is still some way to go.

"If business and industry can throw their tremendous weight, on a large scale, into a better handling of this problem, the impact can be immense. They can do a better job on their own premises. They can also make it clear that a better job needs to be done elsewhere."—New York *Times*.

Army Communications and the Civilian Telephone Industry

By RAY BLAIN

DEPENDENCE of the Army on commercial carriers and other components of the telephone industry is an accepted axiom of modern military philosophy. Although the Army operates and maintains all of its tactical equipment and many of its fixed facilities, commercial carriers are used to good advantage for much of the Army's strategic communications services — especially in the United States. The same telephone industry also provides systems of communications for control of missiles, supply management, and other operations of the Army.

The close rapport between the Army and the telephone industry is a firm, continuing association. It has developed steadily from early and historic beginnings—dating almost from the invention of the telephone itself, and following year-by-year improvements in the art and science of modern communications.

Early Days

Before the turn of the century, commercial telephone equipment and facilities were rented by the Army for local use in posts, camps, and stations of the United States.

In 1893, an example of a typical year, there were 52 Army garrisons that were equipped with 91 telephones, 134 transmitters, and related apparatus —all leased from national as well as Independent telephone companies of that early era.

After the turn of the century, the Army stopped rentals of such apparatus, and purchased the equipment outright from available commercial sources.

Prior to 1913, communications facilities at a typical Army post consisted of *one* telephone—installed in the office of the commanding officer or post commandant. Sometimes a second line might be installed for the post quartermaster. And if the post was exceptionally large, an extension for the post adjutant was installed on the commanding officer's line. Although of proven usefulness, telephony was still something of a novelty.

Between 1913 and 1917, however, facilities and traffic within Army posts, camps, and stations increased steadily. When more than 15 telephones were required, a switchboard was necessary—usually either a 20-line cordless magneto type or a 50-line magneto type.

The first common-battery switchboards were introduced later during this period. Operating with either 24 volts or 30 volts, they had a capacity of 50 lines and had electrically operated visual signals for both line signalling and supervisory purposes.

RAY BLAIN

Lamp-type switchboards were adopted subsequently. They were 100-line, one position; 200 to 400-line, two position; and 300 to 600-line, three position.

During World War I, there was a pronounced increase in equipment and facilities at all of the many Army posts, camps, and stations in the United States. In addition, commercial communications companies liberally contributed facilities as well as technical personnel to aid in the construction of more than 22,000 circuit miles of wire lines and the operation of over 260 telephone exchanges that comprised our extensive telephone system in Europe.

War Expansion

The greatest volume application of commercial telephone facilities to Army service, however, began during the national emergency preceding World War II and continued at an almost-saturation level until the cessation of hostilities in 1945.

During this five-year period of expansion, demands upon military fixed communications at posts and stations within the United States became so great that the Army was unable to provide either the large amount of equipment and facilities or the personnel to operate and maintain such local systems.

Starting in 1940, the telephone industry provided complete, local communications systems for approximately 3,000 Army installations and defense plants which were then established throughout the United States. The majority of these systems were rented at filed commercial tariff rates from commercial companies in which normal ter-

ritory the military systems were located.

The Bell System alone provided all military departments with about 400,000 miles of leased circuits, 2,500 teletypewriter stations, and much other related ancillary equipment.

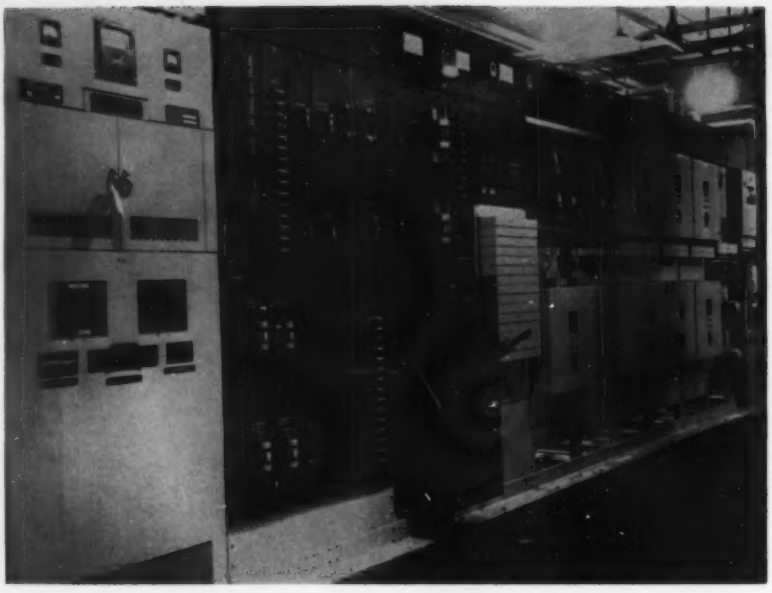
War Training

At the start of World War II, the entire enlisted strength of the Army Signal Corps was less than 5,400 men. By the end of 1942, the strength was more than the total of all branches of the Army had been in 1939.

This rapid expansion of Army Signal Corps personnel, and particularly the increase in commissioned officers, was aided greatly by the ready cooperation of both national and Independent companies of the telephone industry.

Starting in 1939, the industry furnished officers, non-commissioned officers, and technicians as *cadres* for over 200 affiliated reserve units of the Signal Corps. Companies of the Bell System sponsored affiliated units with a total personnel of more than 3,000 officers and men—all technical specialists. Independent companies sponsored a score of affiliated units with a total of more than 200 technical personnel.

In addition to technical *cadres* for affiliated units, the Army general staff recognized the value of assigning to the Signal Corps those men with telephone experience who were inducted into the Army during this period. In 1942, approximately 50,000 men with telephone experience had been assigned by this method to the Army Signal Corps.



Power switchboard in a typical U. S. Army, Signal Corps, exchange.

Current Systems

The Army's need for commercial telephone communications abated slightly with the cessation of hostilities in 1945, but soon began increasing as new Army requirements were established for additional and extensive communications facilities in the United States.

A dearth of available radio frequencies, particularly in the high-frequency bands, posed an increasingly difficult problem for domestic allocation of communications stations. In addition, the cost of installing and maintaining Army-owned landlines was prohibitive.

As a logical solution, the Army continued to lease the majority of the circuits it required from commercial carriers. Since the Army had sufficient teletypewriter terminal equipment, the leased facilities were limited largely to teletypewriter exchange services and to telephone systems within Army posts, camps, and stations.

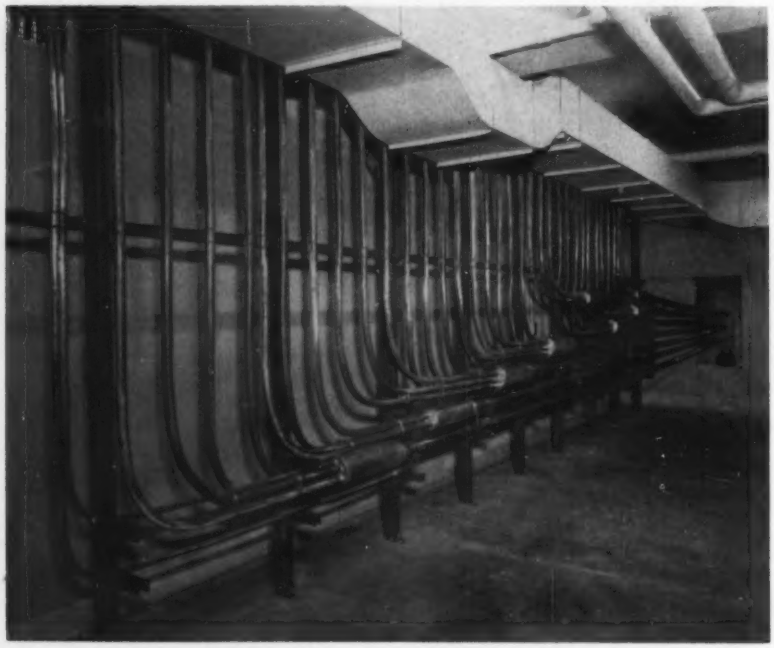
At the present time, there are about 500 private branch exchanges in the 50 United States and in parts of the Caribbean. Of these, approximately 200 are owned by commercial companies. Equipment and facilities for all of the 500 exchanges were obtained from the telephone industry — including about 250,000 lines, which presently serve about 240,000 telephones.

The Army owns and operates most of its principal international circuits. However, the Army relies heavily on commercial carriers for certain alternate routes and necessary facilities, which are important supplements to the Army's global communication system.

In addition to providing circuits and equipment, the telephone industry also assists the Army in planning and system engineering.

As a result of the continuing close cooperation and coordination between the Army and commercial carriers, the

(Continued on page 64)



Cable vault in U. S. Army, Signal Corps, telephone exchange.

A Good Citizen Knows His Government and Makes the Best Possible Use of His Vote

JUST HOW GOOD IS YOUR POLITICAL IQ?

ALL OF US are interested in good government, because government affects our daily lives, our pocketbooks, rights and liberties. How good our government will be depends in large degree on the individual citizen's understanding of the American political system.

How sharp are you on the subject? With election year coming up, you'll want to be as well informed as possible. Here are a few questions to test your knowledge of government, its structure and responsibilities. You'll find the answers on page 66.

(1) The Federal Government is composed of three branches, each with its own special powers. The branches are _____. (A—The Congress, the Supreme Court, the Treasury. B—The Legislative, Executive, and Judiciary. C—The Senate, the House of Representatives, and the State Department.)

(2) The Senate—or upper house of Congress—is made up of _____ Senators. (A—96. B—98. C—50. D—200.)

(3) The number of Senators representing each state is _____. (A—Determined by the state's population. B—Always one. C—Determined by the area of the state. D—Always two.)

(4) Who serves as President and presiding officer of the Senate? _____ (A—The Senator with the longest term in office. B—The leader of the majority party. C—The Vice President of the United States.)

(5) One third of the Senate is elected every two years to a _____ year term. (A—Six. B—Two. C—Four.)

(6) What happens in case of a tie vote in the Senate? _____. (A—A filibuster results. B—The President of the Senate casts the tie-breaking vote. C—The question is referred to the House of Representatives.)

(7) At present there are 436 members of the House of Representatives. Each state must have at least one representative, and additional representatives are assigned to the states on the basis of _____. (A—The number of votes the state has in the Electoral College. B—The number of Senators it has. C—Its total area. D—Its population as determined by a census taken every ten years.)

(8) The presiding officer (or Speaker) of the House—one of the most influential men in the nation's government—is _____. (A—Joseph W. Martin. B—Lyndon Johnson. C—Sam Rayburn. D—J. E. B. Stuart.)

(9) What is the party alignment, in terms of members, in the present Senate? _____. (A—72 Democrats and 26 Republicans. B—64 Democrats and 34 Republicans. C—64 Republicans and 34 Democrats.)

(10) What is the party alignment in the House of Representatives? _____. (A—283 Democrats and 153 Republicans. B—220 Democrats and 216 Republicans. C—220 Republicans and 216 Democrats.)

(11) The President is elected by _____. (A—Direct popular vote. B—By a group of state representatives (the Electoral College), elected to vote for presidential candidates. C—A two-thirds majority of Congress.)

(12) The _____ follows the Vice President in the line of succession for the office of President if the President dies or resigns or is removed from office. (A—Secretary of State. B—Speaker of the House. C—President pro tempore of the Senate. D—Secretary of the Treasury.)

(13) How much would it cost each U. S. family in additional taxes to pay off the national debt this year? _____. (A—Over $500. B—Over $1,000. C—Over $3,000. D—Over $6,000.)

(14) How much did it cost during the past year (fiscal 1959) to run the federal government for just one day? _____. (A—Over $500 thousand. B—Over $2 million. C—Over $50 million. D—Over $200 million.)

(15) The Supreme Court is made up of _____. (A—Twelve Justices. B—A Chief Justice and eleven Associate Justices. C—A Chief Justice and eight Associate Justices.)

(16) Who is the present Chief Justice of the Supreme Court? _____. (A—Felix Frankfurter. B—Herbert Brownell, Jr. C—John Marshall. D—Earl Warren. E—William O. Douglas. F—Oliver Wendell Holmes.)

(17) What happens to a bill that is vetoed by the President? _____. (A—It is submitted to the Supreme Court for a ruling. B—It cannot become a law. C—It can become law without the President's signature if again passed by a two-thirds vote of both Houses of Congress.)

(18) What is the average citizen's largest annual expense? _____. (A—Food. B—Housing. C—Clothing. D—Taxes.)

Reprinted from *Pennsylvania General News.*

Prestige: Asset and Incentive

By BEN SMITH*

WE IN THE telephone business enjoy a valuable asset. It is prestige. Prestige acquired by inspiring confidence and the esteem that people have for us—prestige with our customers, the general public, and within our own telephone family. It may be well that all of us in the telephone business be reminded of our responsibility to keep and even improve that prestige. When the telephone company and its people living in a community have good character, are good citizens, then they may be well thought of, then they acquire prestige. Everything we do and say will affect that prestige—improve it or degrade it.

When you have acquired prestige, then you must continue to act and even look as the public expects you to. Things that other business concerns, which have less prestige do, we cannot do. Our buildings must be attractive, in keeping with the community in which we do business. They must be clean, the grounds must be well kept. The appearance of our trucks, the appearance of our people, the manner in which we do business, even our payment of our fair share of government—to run the city, county, state, nation—all have their bearing on the esteem in which we are held. The way the company and its people act and take part in civic affairs all help to contribute to that prestige, and prestige is something that starts small and grows.

We in the telephone business know that because of our prestige, our company representatives find it easier to talk to our customers. Doors open for us more quickly. We are able to show our customers the facilities we have to help them get better and more telephone service. Our representatives in the local community find that, because of the prestige of telephone people and the telephone company, company representatives are accepted as part of organizations and associations, and even schools and churches, more readily.

Our prestige affects the credit of our company, as well as that of telephone people. Our prestige can help present share owners and new ones decide to invest in the future of the business.

Our interest in furnishing not only the best service but also the most complete and useful telephone facilities can influence our customers' opinion of us. Our development of the art is most important, but our prestige is increased when we explore the needs and desires of our customers for new useful facilities for today and tomorrow, and have these facilities ready to meet the customers' needs.

There is another side to this prestige, too. Relations with our customers require more careful handling, because when people are not treated with a helpful, interested manner, as well as courteously, and commitments are not kept by the prestige company, customers are quicker to notice any omission and error because they expect the telephone company to always be interested, helpful, courteous, and meet its commitments. They might overlook these same omissions and errors in some other business which has less prestige—but not in ours.

The prestige of a company is established by the head of that company in the community, and that person sets the tone and the pace. He knows that prestige is important in terms of long-range survival. He knows that a good reputation must not only be protected but continually improved.

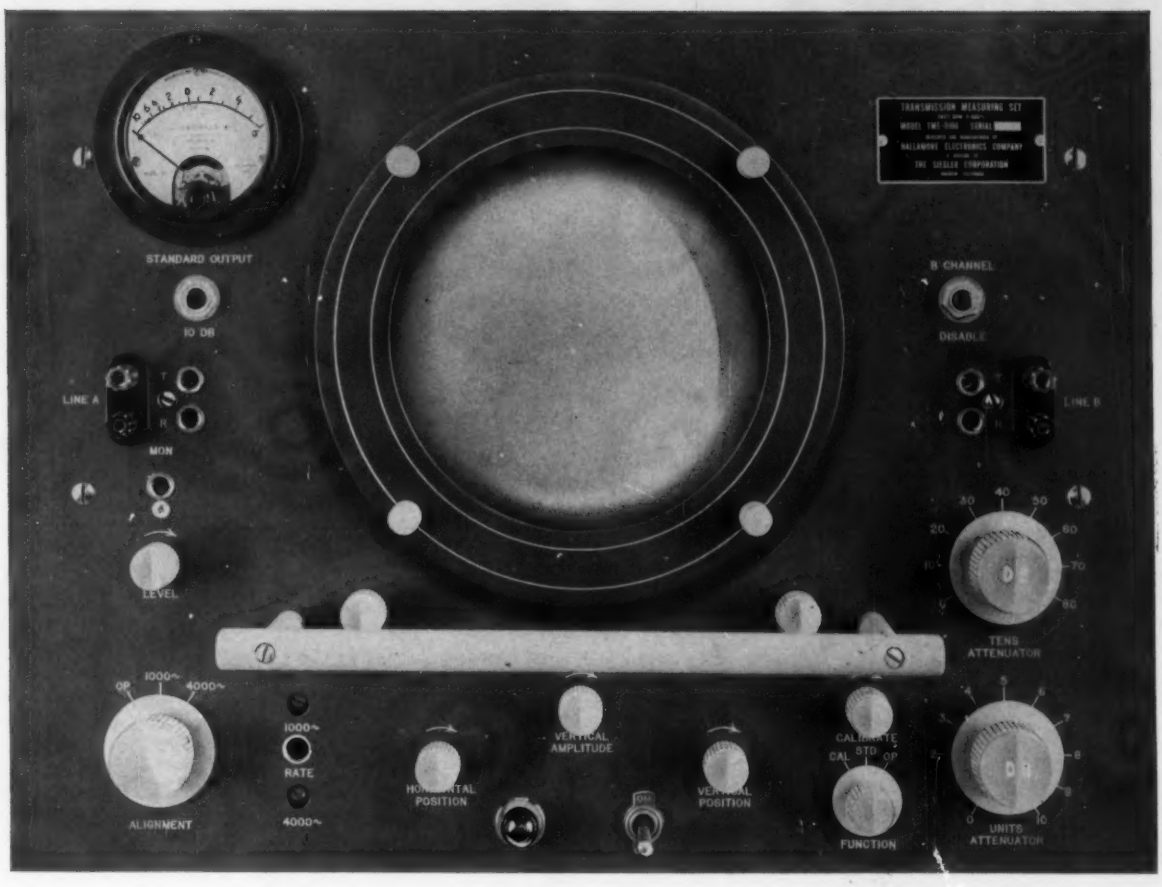
Prestige is of great value to all telephone people. The people in the telephone organization are genuinely proud of that company's name, and proud to tell their friends and relatives that they are associated with the telephone company.

Our challenge is to be sure that all of us communicate our reputation, our character, our pride in the company, in all our dealings with the public and customers.

Prestige is part of the climate in which we work, and a good climate is important as a morale builder. The prestige the telephone company and telephone people have is something to guard zealously. Telephone people have the continuing responsibility to maintain the prestige that has grown over the years as a result of many good people, honest dealings, truthfulness, reliability in making commitments and keeping them.

You are the telephone company, and this prestige belongs to you. Guard it. Protect it. Continue to build prestige.—Reprinted from *Bell Telephone Magazine.*

*Mr. Smith is General Merchandising Manager of Southwestern Bell Telephone Co.



A NEW APPROACH TO TRANSMISSION MEASUREMENT

Requirement: Examine transmission characteristics of a circuit and associated apparatus within a prescribed frequency band and display these characteristics visually. **Solution:** TMI-0100 Swept Band Transmission Measuring set developed and manufactured at the Anaheim laboratories of Hallamore Electronics Company.

This new unit continually displays the input and output voltages and measures their ratio by the simple manipulation of step attenuators. Photographs of the traces provide a permanent record. Field tested applications include: 1. Measurement of loss vs. frequency characteristics of physical line facilities in frequency range from 150 cps to 4000 cps. 2. Measurements of repeater or amplifier gain. 3. Determination of return losses. 4. Location of load faults. Detailed descriptive material will be sent promptly to you upon your request to Hallamore Electronics Company, Telephone Department, 714 North Brookhurst Street, Anaheim, California. A Division of The Siegler Corporation.

HALLAMORE

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

WE ARE ADVISED by an overseas correspondent that they have several telephone companies that provide the facility of "reveille calls." Subscribers desiring this service are called by an operator at an appointed time each morning. This facility has always been operated on a manual basis from conveniently located switchboards.

It now develops that this type of traffic has increased to such an extent that too many operators are employed and consideration has been given to an automatic system of calling using a recorded tape for the announcement. There are numerous difficulties in this method, however, since a large number of subscribers require their calls at approximately the same time.

Our correspondent inquires as to whether we have a similar problem and if so how it has been solved.

We have never heard of a "wake up" service being handled automatically. Hotel PBX operators and telephone answering services do provide this service, but on a manual basis.

It would appear that equipment now being used to call volunteer firemen could probably be modified to furnish "reveille service." If any of our readers have a better idea, we would be pleased to hear from them.

•

England now has public telephones that can be used for Direct Distance Dialing which they have named "Trunk Dialing Service."

With this pay telephone, the caller cannot deposit any coin until there is an answer. A single coin is all that is required to start a conversation. When the called party answers, a special tone known as the "paytone" is audible to both parties.

The time permitted will depend on the distance of the call. When the paid time runs out, the paytone will come on again for about three seconds and a 9-second warning is given before the call is cut off so that the caller may finish the conversation or deposit another coin.

•

Very few homes know what telephone numbers to dial in an emergency. These are the fire and police departments, the doctor, a hospital, or an ambulance. These numbers should be written or underlined on the front page of the telephone directory. It is also an excellent plan to jot these numbers down on a sticker and paste it on every telephone in the house.

When seconds count in an emergency, it is always much faster to dial the number yourself. If you can't dial the number yourself, then dial "0" (operator), tell her whom you want, and then remain on the line in order to give any details that may be necessary to meet the emergency.

•

We have a letter from Edward V. Ketcham Jr., of the Pressed & Welded Steel Products Co., Inc., Long Island City, N. Y., in which he makes comment on our item in the Sept. 19 issue on all-numeral dialing.

Mr. Ketcham mentions the fact that one of the first telephone companies to use dial equipment, the Hawaiian Telephone Co., makes use of this all-numeral system. This busy company handles toll calls from the far end of the AT&T's underseas cable.

•

In New York City's new Manhattan directory, exchange names have been dropped to keep the book compact and easy to use. For example: WORTH 6-9999 is now simply WO 6-9999.

We predict that this system will encounter some objections.

Columnist Bill Gold, of the Washington, D. C., *Post* who conducts a give-away feature in which readers write in to report unwanted pets, refuses to accept requests unless exchange names are spelled out in full.

He claims that because of poor handwriting, letters are often misread and the wrong telephone number is listed.

Let's hope that dropping the exchange name is just the first step in eliminating letters from all telephone numbers. In this way, WO 6-9999 would become 966-9999 which would certainly simplify both directory listing as well as dialing for everyone concerned.

•

The Australian Post Office Engineering Division publication "On the Line" describes a case of cable trouble under the heading "Canine Capers."

An unusual cable fault recently occurred in Sydney.

Inspection showed that in a pit, which was dry and free from mud, leaves, etc., general corrosion had taken place on the upper surface of the cable. The pit was located on the building line at a corner site, and there was evidence that the spot was a favorite meeting place for man's best friend.

Examination of the faulty sheath in the research laboratories showed that the corrosion was apparently caused by organic acids running into the pit and attacking the leads.

•

In California, the Pacific Telephone & Telegraph Co. is making a study by the use of portable recording thermometers to find out just how hot outdoor type telephone booths get during the summer months.

It has been learned that the temperature reaches a high of 118 degrees F. in booths at some locations. It has also been determined that screens, aluminum panelling and other devices can affect temperatures up to 20 per

cent. Experiments will be made with other materials before definite conclusions are reached.

•

The Berkeley-Carteret Hotel in Asbury Park, N. J., has a red telephone installed in a prominent location in the lobby with this sign above it:

"Your comments on our facilities—together with your suggestions to improve our service are welcome. You may record your message to us by using this telephone. Thank you.
"The Management"

This is considered an excellent idea and if promoted properly should increase the revenue of any telephone company.

•

A total of 82 freight cars were required to deliver the new yellow paged telephone directories to Washington, D. C. These new directories for the metropolitan area offer two new features: a guide to Direct Distance Dialing (DDD) in the front, and two special sections listing the numbers of frequently called government agencies. These agencies and their numbers appear in heavy type within a box at the start of "District" and "United States" listings. These numbers were selected by maintaining a record of the numbers most frequently requested from the information operators.

•

We are told that our days are like identical suit cases—all the same in size, but some people can pack more into them than others.

•

The phototube is a vital element in many applications of electronics on communication. A 96-page book in soft cover binding titled: "Phototubes" may be purchased from TELEPHONY for $1.80. This book deals with the principles underlying the operation of the different types of phototubes, with detailed explanations of terminology.

•

Winter liners are now available, designed to fit all types of hard hats and caps and provide warmth and protection for workers. These liners are preshrunk, vat-dyed and every seam lockstitched to prevent unravelling.

Bias-cut bonding provides "give" for extra wearing comfort. Small, medium and large sizes assure correct fit for every head size.

•

Nonchalance is defined as the ability to look like an owl when you have behaved like an ass.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. We are frequently faced with the problem of providing additional trunks between our exchanges. Will carrier equipment prove economical for this purpose?

A. Transistorized trunk carrier equipment, now available, is designed for this purpose. This equipment provides trunk channels with E and M signaling for extended area and short-haul service. It will operate over open wire or cable facilities or a combination of both.

This carrier provides five voice channels in addition to the existing physical facility. Individual channels can be installed, connected or replaced without affecting other channels in the system.

This carrier has been engineered to operate on dial and common battery systems. The system is designed to operate with dial speeds of 8 to 20 pulses per second with negligible pulse distortion.

•

Q. Can you inform us as to the rates usually charged for home-to-school service used for the instruction of shut-in children in their own homes?

A. These costs will vary, depending on the distance of the home from the school, the number of classes involved, and the filed tariffs of the local telephone company.

Usually, a charge is made for a private telephone line between the home and the school, and for installation of speaker units at both locations.

We have information of one installation which can be considered typical that costs $13.25 for the initial installation. The rental per month was $13.75.

•

Q. Is it possible to inoculate a person in order to provide an immunity against poison ivy?

A. A standardized non-toxic extract of poison ivy or poison oak is presently available for this purpose under the names of "Imunivy" and "Imunoak." It is claimed that when taken as directed they will eliminate or reduce substantially the incidence of poison ivy or oak.

These products may be taken orally or injected intramuscularly by a physician. The majority of the companies using these products make them available to their employes in the early spring.

•

Q. Is there such a thing as a direct current telephone receiver?

A. There is, and at one time it was used rather extensively. In common battery systems where the direct current is fed from the central office to local stations, it has been learned that the current that must flow through the line to furnish talking battery may also be used for the additional purpose of energizing the receiver magnets so as to give them the necessary initial polarity.

When the strength of the current flowing through the receiver magnet coils is varied, the tension on the diaphragm varies directly with the current and results in a vibration of the receiver diaphragm. When the voice through the transmitter causes the variation of current, the receiver responds and reproduces the sound of the voice.

Present-day practice favors the permanent magnet type receiver. The later design is greatly improved and has a much smaller magnet than the earlier types.

•

Q. What is the largest size plastic-insulated and jacketed cable that can be obtained at the present time?

A. The largest size of which we have any knowledge is 400-pair, 22-gauge. This particular 400-pair cable is also available in 24 and 26-gauge.

•

Q. What type of heating is recommended for use in a small unattended dial exchange?

A. Approved type electric and gas heaters are available for this purpose. These heaters are fully automatic and are equipped with necessary controls and safety devices.

REA APPROVED

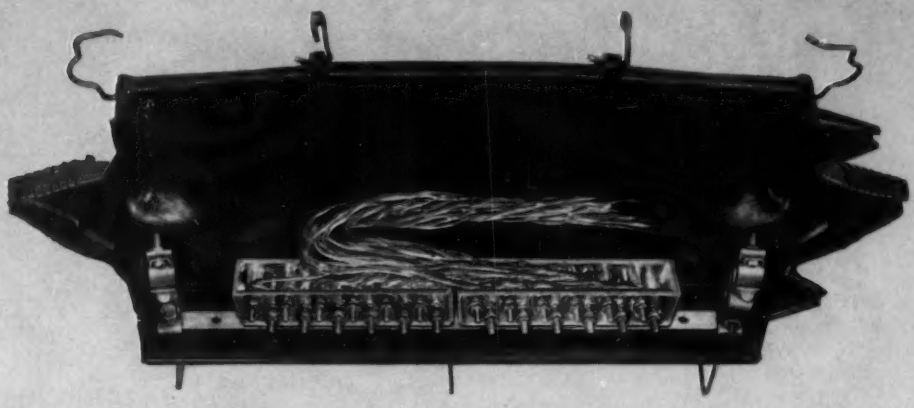
Not Copied But

DESIGNED FOR INDEPENDENT TELEPHONE INSTALLATION

VERSATILE, ACCESSIBLE, EASY TO INSTALL

The Cook Cable Coat eliminates the need for:

Taped Splices:	flexible neoprene coat covers the splice area completely, can be opened and reached without damage, at any time.
Potting:	terminal blocks are filled with plastic resin and furnished with stud jumper wires for making cable conductor taps which eliminates the need for cutting and splicing the cable when taking off subscriber pairs. Connections are made by tapping onto the specified skinned conductors.
Optional Protection:	by using protected terminal blocks, Minigap selective pair protection is provided adjacent to the conductor stud, thereby eliminating the need to jumper to a pole mounted protector.



PROTECTED OR UNPROTECTED

Protected Terminal blocks available as well as unprotected. Selective pair protection is provided with either the Cook Minigap or Mytigap Arresters. Protected Terminals available in 6, 12, and 16 pr. sizes; unprotected in 6, 12, 14, 16, 18, and full count of 26 pr. sizes.

OPTIONAL AUXILIARY NOZZLE

The auxiliary nozzle allows for either *wye* branch or terminal splicing, thus increasing the versatility and practicality of the new Cook Cable Coat.

COOK ELECTRIC Company

2700 SOUTHPORT AVENUE CHICAGO 14, ILLINOIS

Wheatstone Bridge Measurements

By JOHN A. BRACKEN

Part 2

THE METHOD for measuring the value of an unknown resistance by means of a Wheatstone Bridge is as follows:

(1) The resistance to be measured is connected to the bridge binding posts marked "× 1 and 2." See *Fig. 1* and associated classification *Chart 1.*

(2) The cam lever switch is operated to the left (RES.) position.

(3) The "Multiply BY" dial ratio switch is rotated until the ÷ mark on the dial coincides with the vertical arrow head, as shown in *Fig. 1.*

(4) If the bridge is equipped with an internal battery, the turn button switch designated "BA" is turned until the arrowhead on top of the switch points to the letters "IN." If a higher voltage battery located outside of the bridge is used, the "BA" switch must be turned with the arrowhead pointing to the letters "OUT."

(5) The disc marked "CLAMP" located on top of the galvanometer just above the scale is pushed backward, in the opposite direction to that in which the head of the arrow on top of the clamp points. This releases the galvanometer needle from being locked in an immovable position.

(6) The bridge rheostat dial switches are set for a preliminary balance at an approximation of the value of the unknown resistance being measured. This is obtained by first rotating the dial marked "1000" so that number 1 on the dial coincides with the vertical arrow head just below it.

(7) Then the ".01" galvanometer shunt key is alternately depressed and released and the movement of the galvanometer needle is observed with respect to the needle coming to rest at zero. No attempt is made to evaluate the galvanometer scale divisions, as they are without significance other than serving as a guide to the movement of the galvanometer needle with respect to it centering at zero. When the galvanometer shunt key is depressed, and the needle deflects to the

Classification of Bridge Parts Shown in Fig. 1

Arrow	Points to	Marked	Purpose
A	Binding Post	Rh	Connection for Converting Bridge to a Variable Resistance Box
B	Cam Lever Switch	Res	Lever Operated to "Res" Position for Simple Resistance Measurements
		Var	Lever placed in "Var" or Normal (unoperated) Position for Varley Loop Test
		Mur	Lever Operated to "Mur" Position for Murray Loop Test
C&R	Binding Posts	1 GA 2	For Connection to a Galvanometer Located Outside the Bridge
D	Binding Posts	GR	For Connecting Bridge to Ground
E	Ratio Dial Switch	Multiply By	For Changing Ratio Arm Value
F&G	Binding Posts	× 1 2	Bridge "X" Arm Connecting Point for Making Bridge Measurements
I	Galvanometer		Balancing Bridge
J, K&L	Galvanometer Shunt Keys	.01 .1 1	Reduces Amount of Current Passing Through the Galvanometer
M	Rheostat Dial Switches	1 & 10	Part of Bridge "R" Arm
N&P	Binding Posts	+ BA —	For Connection to a Battery Located Outside the Bridge
O	Turn Button Switches	In Out GA	For Switching from the Bridge Galvanometer to Another Located Outside the Bridge
		In Out BA	For Switching from Bridge Internal Battery to a Battery Outside the Bridge
Q	Rheostat Dial Switches	100 & 1000	Part of Bridge "R" Arm

Chart 1

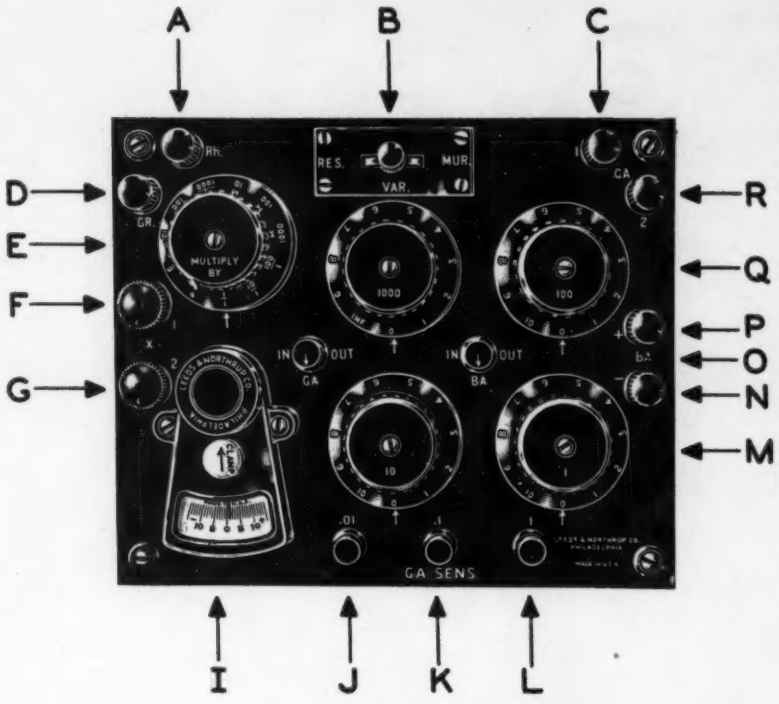


Fig. 1

right of the galvanometer scale zero, toward the + sign, the amount of resistance inserted in the rheostat is too small. Resistance must then be added by rotating the "1000" rheostat dial until the number 2 coincides with the vertical arrow head, instead of the number 1.

If, under this condition, when the ".01" galvanometer shunt key is alternately depressed and released, the galvanometer needle deflects to the left toward the — sign, it is indicative of too much resistance being added and must be subtracted by rotating the "1000" rheostat dial back to the number 1 position. In like manner, the "100," "10" and "1" rheostat dials are respectively rotated until a balance is obtained. The galvanometer needle then rests at zero when the ".01" and .1 galvanometer shunt keys are depressed in sequence.

If the galvanometer needle does not rest at zero, a more precise balance is made by depressing the "1" galvanometer shunt key and rotating the "10," and finally the '1" rheostat dials, until a zero balance is obtained. However, if a zero balance cannot be obtained, then the nearest galvanometer scale division, either right or left, of zero to which the galvanometer needle deflects, is usually accepted as the best balance obtainable.

When the ".01" galvanometer shunt key is depressed it allows only a fraction of the current flowing in the bridge circuit to pass through the galvanometer. Depressing the ".1" shunt key passes more current, and when the "1" shunt key is depressed, a maximum amount of current passes through the galvanometer to increase its sensitivity.

As a precautionary measure against damaging the galvanometer, the "1" shunt key should never be depressed until after the nearest balance to zero on the galvanometer scale is obtained by means of the ".01" and ".1" shunt keys, respectively.

(8) After the bridge is balanced, the value of the unknown resistance is equal to the reading of the rheostat dial settings multiplied by the setting of the ratio dial.

For example, in the above case, with the ratio dial set at $\frac{1}{1}$, assume the bridge is balanced with the "1000" rheostat dial set at 1, the "100" dial at 2, the "10" dial at 3, and the "1" dial at 4, then the value of the resistance connected to the bridge "× 1 and 2" binding posts is equal to $\frac{1}{1}$ or, $1 \times 1234 = 1234$ ohms.

Under certain conditions it is impracticable to make a direct connection between the Wheatstone Bridge and the resistance to be measured. In this case, leads must be used in order to ascertain the correct value of the unknown resistance. The resistance of the leads must be subtracted from the measurement. If the resistance of the leads is not known, their resistance may be determined by measuring them alone, either before or after measuring the unknown resistance. Measurement of different values of unknown resistances necessitates changing the

(Continued on page 74)

UNKNOWN RESISTANCE			SET RATIO DIAL AT	MULTIPLY RHEOSTAT READING BY
Less Than		1 ohm	$\frac{1}{1000}$	.001
10	to	100 ohms	$\frac{1}{100}$	.01
100	to	1000 ohms	$\frac{1}{10}$	.1
1000	to	100000 ohms	$\frac{1}{1}$	1
10000	to	100000 ohms	$\frac{10}{1}$	10
100000	to	1000000 ohms	$\frac{100}{1}$	100
1000000	to	10000000 ohms	$\frac{1000}{1}$	1000

Table 1

Leich

LEICH
Subsidiary of GENERAL TELEPHONE & ELECTRONICS

lights up when

you bury service wire

The more wire you bury, the better *we* like it and *you* like it too! Buried service wire just lays there and saves you money. No wind, no ice, no sun, no storms. When you need good wire that is designed for buried underground service, Leich will supply it quickly and competitively.

As a matter of fact, whenever you need anything in the way of telephone supplies, you can rely on Leich to furnish highest quality products. We also try to give prompt deliveries that are complete and accurate every time. This saves you both time and trouble in your telephone installation and service work.

It's easy to order from Leich, too. Our brand new supply catalog is a grand working tool, and contains up-to-date information in an easily readable form.

What we're trying to say is that Leich is a good place to do business. You can be sure of the best—in products, in service. Give us your next order and see for yourself. You'll like Leich.

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EAST: 3651 CONNECTICUT AVENUE, YOUNGSTOWN, OHIO

SOUTHEAST: 5126 SOUTH LOIS ST., TAMPA 11, FLORIDA

manufacturers of telephones, switchboards and related apparatus since 1907

REA Administrator David A. Hamil welcomes crowd to exhibits at the opening of the 10th anniversary of the REA telephone program. Seated at left are: True D. Morse, under secretary of agriculture; Everett C. Weitzell, REA deputy assistant administrator—telephone; Norman H. McFarlin, REA assistant administrator—telephone, and Roy G. Zook, REA assistant administrator—electric.

REA Celebrates 10th Anniversary of Telephone Program

THE TENTH ANNIVERSARY of the REA telephone loan program was observed in Washington by a series of events during the last week of October.

Highlighting the observance was a speech, prepared for delivery by Secretary of Agriculture Ezra Taft Benson, at the opening of a special exhibit of telephone equipment in the patio of the Department of Agriculture's administration building. Because of the secretary's illness, the talk was given by Under Secretary True D. Morse.

"It is no exaggeration," Mr. Morse said, "to say that a new era of rural communication began on Oct. 28, 1949, the day REA was authorized to assist rural people in obtaining modern telephone service."

Exhibits in the patio included displays by REA, the Bell System, and the following companies:

Automatic Electric Co.

Budelman Electronics Corp.

Collins Radio Co.

Kellogg Switchboard & Supply Co.

Leich Sales Corp.

Lynch Carrier Systems, Inc.

Motorola, Inc.

North Electric Co.

Panhandle Electric Sales, Inc.

Philco Corp.

Stromberg-Carlson Co.

U. S. Instrument Corp.

REA's official observance of the anniversary was held in the departmental auditorium on Oct. 28, before a near-capacity audience. Top-ranking officials of the Department of Agriculture, former officials of REA, members of the REA administrator's Telephone Advisory Committee, and most of the REA staff gathered for a two-hour presentation. It featured highlights of the REA telephone program, a portion of the REA movie "The Telephone and The Farmer," and telephone calls made by REA administrator David A. Hamil, on stage, to subscribers of REA-financed telephone systems in Arkansas and North Dakota.

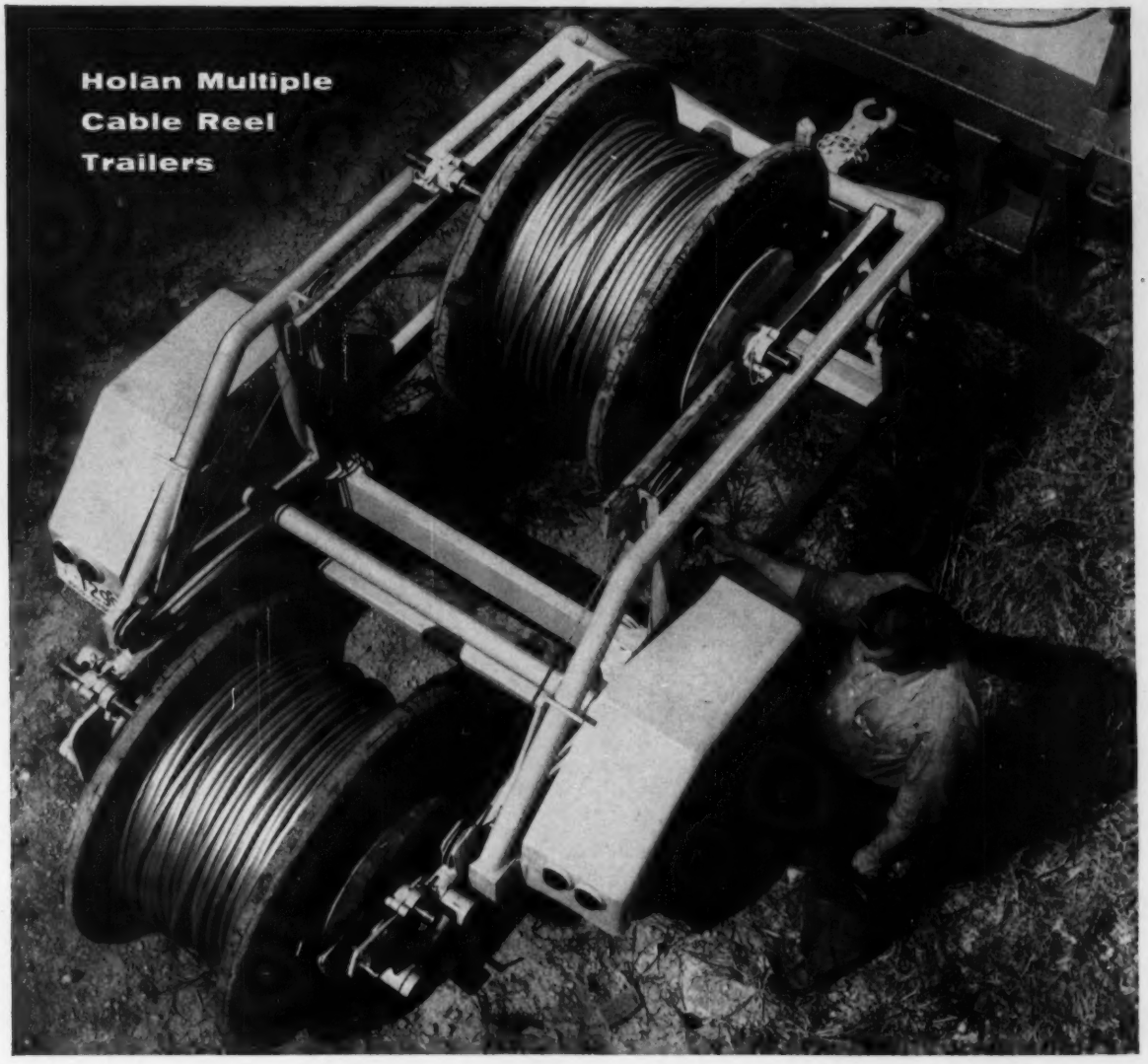
During his address, Administrator Hamil said:

"The objective of REA in the rural telephone program is clear. We are here to make loans to help rural people get the modern telephone service they want and need — and to make these loans on a feasible basis. . . ."

Bryson Rash, NBC news commentator, acted as master of ceremonies. Music was furnished by the United States Marine Band.

The manager of an REA telephone company borrower and the manager of a telephone cooperative borrower also participated. They were J. P. Maguire of the Central California Telephone Co. of Bakersfield, Cal., and Eugene R. Britt of the Pineland Telephone Cooperative of Metter, Ga. They acted as narrators for illustrated slides showing the importance of REA financing in providing modern dial service to their two communities.

General view of audience gathered to hear Under Secretary of Agriculture True D. Morse open the REA telephone program's 10th anniversary observances.



Make reel loading a one-man job

One man can load two cable reels and be on his way in three minutes with a Holan Multiple Reel Trailer.

Such speedy handling of heavy reels of cable by one man is possible because of simple, safe, functional design and a patented loading device.

Holan offers a complete line of 1-, 2-, 3-, and 4-reel trailers —all incorporating the same design features that assure safe, fast, economical operation by one man.

Pickup arms lower to within 12″ of the ground, handle reels as small as 24″ and as large as 54″ without any special attachments and without any heavy lifting by the operator.

A pushbutton controlled electric winch or hand winch lifts the reel into place. Both are located away from the hoisting mechanism, thus assuring that the operator stands clear of the reel while loading and unloading.

The electric winch is designed to prevent overloading of the lifting cable—even if the operator continues to apply power after the lift arms have reached maximum height. Reels roll freely to forward positions on spindle bars of sufficient length to support them in the event careless handling should cause the reels to shift from side to side or out of square.

Exclusive 22″ electric disc brakes eliminate overspin, give positive braking action, and provide tension for reconductoring.

Write today for your copy of the Multiple Cable Reel Trailer brochure—or ask your Holan Field Representative for the facts that prove reel handling can be a one-man job.

Holan Corporation, 4100 West 150th St., Cleveland 35, Ohio
Plants in: Cleveland, Ohio; Griffin, Georgia; Phoenix, Arizona

Holan

Subsidiary of THE OHIO BRASS COMPANY

HOLAN

Thanksgiving Again

By MAYME WORKMAN
Telephony's Traffic Editor

THANKSGIVING AGAIN
Thanksgiving again and granaries filled;
The gnawing of hunger shall truly be stilled
By bounteous harvests obtained from the sod,
When sunshine and rain were sent by our God.
Remember your Lord as you happily feast
And thank him sincerely that He has increased
The yield of the seed from darkness of earth,
There hidden to come to a verdant rebirth,
Thanksgiving again and our hearts rejoice!
So, come let each of us raise his voice
To praise our Lord on Thanksgiving Day,
Who blessed us in His inimitable way!
—Allinder

•

IT IS THANKSGIVING again and we in America have so much for which to be grateful that our very abundance should surely force us to see past the turkey and trimmings to the spiritual gifts showered on us, and beyond them to their Giver.

America stands as the shining example to the world that men of all nationalities, races and creeds can live peaceably side by side when bound with a common ideal. As we feast with our families and friends on Thanksgiving Day, it is proper and fitting that we offer a prayer that America may continue to enjoy the graciousness of God's blessings.

Thanksgiving in the United States is a day set apart annually, appointed by the president and by the governors of the various states for giving thanks to God for the favors and mercies of the year past.

It is essentially a harvest festival and owes its origin to the Pilgrim Fathers. Despite the lean harvest of 1621, Governor Bradford decreed a day of thanksgiving and rejoicing after the scanty crop had been gathered in. This example of sturdy faith spread to the other New England colonies. If our forefathers could be thankful for a lean harvest, it is surely proper and fitting that we should be thankful for our abundance.

In the course of the Revolution, Congress frequently recommended days of thanksgiving and prayer. After the close of the war, many of the states adopted the custom of an annual day of thanksgiving. There was, however, no uniformity of date for holding this festival. Owing, however, to the admirable persistence of Mrs. Sarah Josepha Hale, President Lincoln at last in 1863 appointed Thursday, August 6, "as a day for national thanksgiving, praise and prayer."

Our neighbors in Canada have also long celebrated Thanksgiving, and there, it is proclaimed annually by the governor general.

We have walked into the heritage of our nation. We have, with little effort on our part, become sharers of its wealth and partakers of its honor. We take for granted some of our nation's blessings that have been bought by hard work and sacrifice.

Serving Two Masters

"Despite the significant rise of profit totals from last year's low profit rate, some economists doubt that business will be able to absorb many more (wage) increases that exceed productivity. The principal influence of business upon the price level lies in productivity changes. Rapid productivity gains often permit substantial wage increases with little price increase—or even a decrease. Federal tax policy, however, now discourages needed capital investment and in many lines has slowed down or stopped productivity gains. Thus it appears that future inflationary trends will depend a great deal more upon action by the federal government and labor than upon what business does."—*Nation's Business.*

Perennial Hope

"Who can blame me if I cherish the belief that the world is still young,—that there are great possibilities in store for it?—TYNDALL.

"BE PATIENT JUST A LITTLE LONGER, CHARLIE!... WE'RE GONNA' TRADE IT AS SOON AS OUR RATE INCREASE COMES THROUGH!"

NORTH

THE DYNAMIC FORCE IN THE TELEPHONE INDUSTRY

gateway
to our
new space
at USITA
where
NORTH
was the HIT
of the SHOW

The 1959 USITA Convention was ample evidence that NORTH is on the move. In addition to the display of time-proved products, the introduction of such new equipment as the NX-2 and NX-3 Small Modular Crossbar—Premium Toll Ticketing—the "No-Hands" Ericovox and the Portable, Transistorized Electronic Switchboard set the pace for new and better telecommunications.

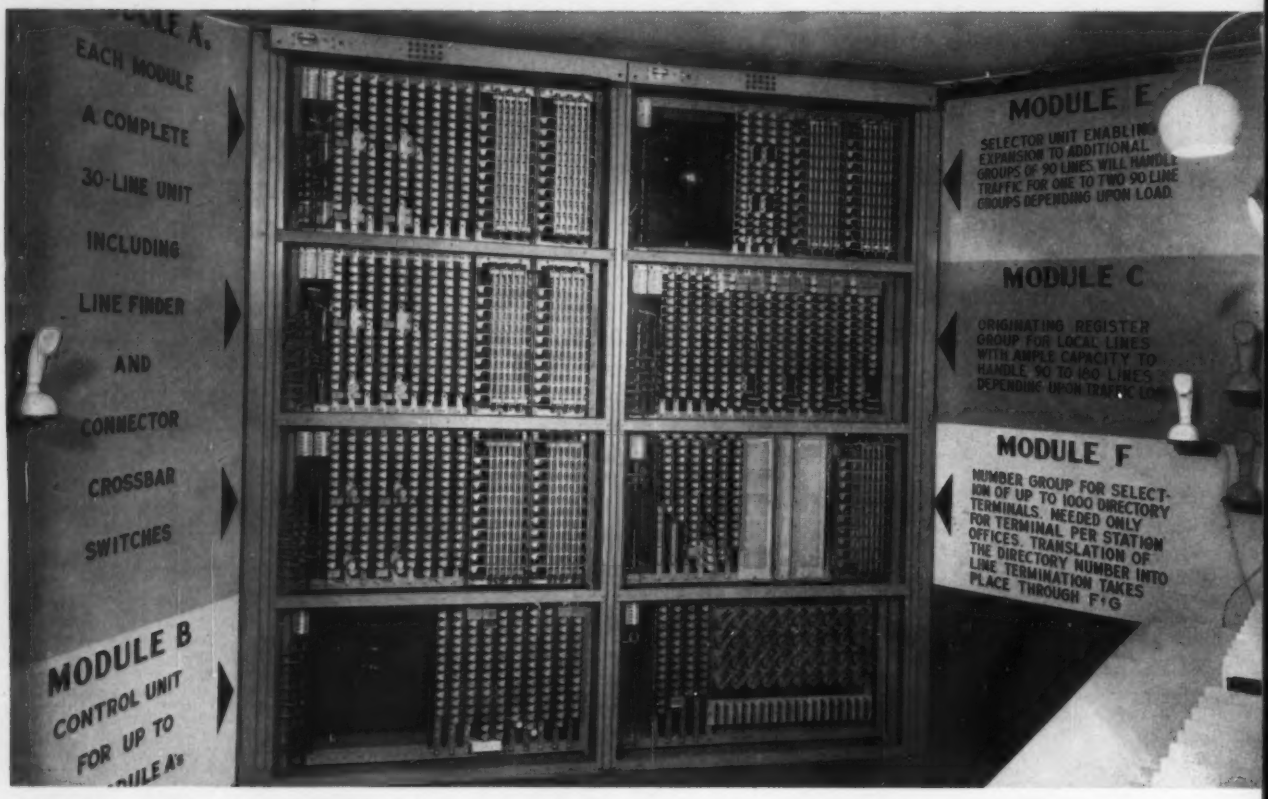
The unprecedented enthusiasm of visitors to the "space that set the pace" further demonstrates the leadership of

the dynamic force in the telephone industry

NORTH ELECTRIC COMPANY

FOR PICTORIAL EVIDENCE OF A NEW PACE TURN THE PAGE

NORTH'S PACEMAKERS AS SEEN AT THE


EACH MODULE
A COMPLETE
30-LINE UNIT
INCLUDING
LINE FINDER
AND
CONNECTOR
CROSSBAR
SWITCHES
MODULE B
CONTROL UNIT
FOR UP TO
MODULE E
SELECTOR UNIT ENABLING EXPANSION TO ADDITIONAL GROUPS OF 90 LINES. WILL HANDLE TRAFFIC FOR ONE TO TWO 90 LINE GROUPS DEPENDING UPON LOAD.
MODULE C
ORIGINATING REGISTER GROUP FOR LOCAL LINES WITH AMPLE CAPACITY TO HANDLE 90 TO 180 LINES DEPENDING UPON TRAFFIC
MODULE F
NUMBER GROUP FOR SELECTION OF UP TO 1000 DIRECTORY TERMINALS. NEEDED ONLY FOR TERMINAL PER STATION OFFICES. TRANSLATION OF THE DIRECTORY NUMBER INTO LINE TERMINATION TAKES PLACE THROUGH F'G

NEW—NX-2 and NX-3 Small Crossbar Systems were the Stars of the Show. Engineers and management men alike immediately recognized the advantages of North's dramatic switchboard design. This new concept is based on standardized modules which can be ordered out-of-stock for immediate delivery and fast, economical installation in offices of 30 to 3000 lines. Acceptance of NX-2 and NX-3 was evidenced by the purchase of several systems right off the exhibition floor.

NEW—Do-it-yourself display demonstrated to thousands the flexibility and simplicity of North's unique transistorized Trans-O-Ring Number Group designed for the new small Crossbar Systems.

Congratulations

LD1CG CGR PD=CHICAGO ILL 13 1001AMC=
H.C RYON=SUITE 609=A
CONRAD HILTON HOTEL CHGO=

CONGRATULATIONS TO YOU AND ALL YOUR MEN ON FIRST DAY RESULTS AT 9811A= SALES OF NEW CROSSBAR AND NEW AUTOLLIZER TOTAL GREATEST NUMBER SYSTEMS SOLD IN SINGLE DAY IN OUR 75=YEAR HISTORY= TELL YOUR MEN THIS IS ONLY THE BEGINNING=
WILLIAM TUCKER PRESIDENT NORTH ELECTRIC CO=

BY WESTERN UNION

Congratulatory telegram from William Tucker, president of North, indicated the enthusiastic response to North's new products as early as the first day.

North's Space Girls Sandy Lipman and Judee Carr pointed the way to North's new space—helped celebrate our 75th Anniversary by cutting a 4-tiered birthday cake.

USITA CONVENTION

NEW—Ericovox, the "No-hands" telephone, is the latest addition to North's line and visitors acclaimed it as the finest instrument of this type they had seen. The complete line of Colortone wall and desk phones also attracted a great deal of attention while North's new Lighted-Dial received the praise of many who recognized the appeal of this feature to subscribers.

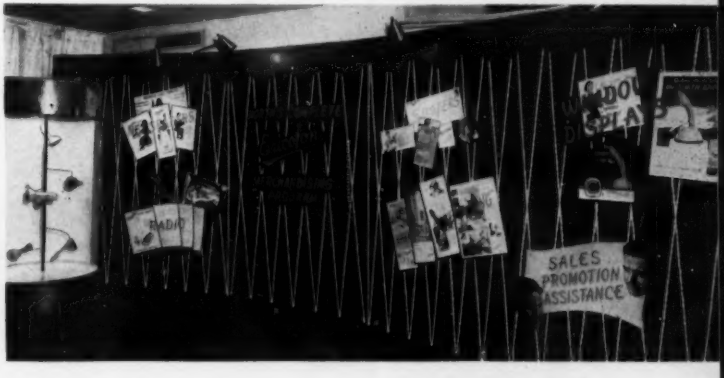
Newly standardized North Carrier, with years of development and refinement behind it, both in the laboratory and in the field, is today's best buy in efficiency, economy and simplicity.

NEW! FIRST COMMERCIAL PORTABLE
ELECTRONIC SWITCHBOARD
FOR MILITARY PURPOSES
A PREVIEW OF THINGS TO COME TO YOU FROM THE LABORATORIES OF NORTH ELECTRIC
• TRANSISTORIZED NO MOVING PARTS NO TUBES
• PUSH BUTTON OR DIAL SWITCHING
• COMPACT 20 LINES 55 POUNDS

NEW—Compact, 20-line Electronic Switchboard that weighs only 55 pounds. This transistorized unit, developed for the military services, is a preview of things to come to you from the laboratories of North Electric.

NEW—Premium AuTollizer Toll Ticketing is the most economical equipment available for completely automatic line identification, routing, timing, toll computation, and ticketing of station-to-station, person-to-person, collect and third number calls. Pay-station and time-and-charge calls are also ticketed with operator supervision. North AuTollizer was of particular interest to the many visitors who are contemplating improved efficiency or expansion to DDD.

North's complete Ericofon Merchandising Program, consisting of attractive bill stuffers, newspaper ads and other merchandising aids, is designed to help you increase revenue through added extensions. This aggressive campaign has been working for Independent Companies across the nation and will work for you, too.



THE DYNAMIC FORCE IN THE TELEPHONE INDUSTRY

NORTH ELECTRIC COMPANY

Galion, Ohio

Courts and Commissions

New Rates Invalid, SBT&T Seeks Back-billing in Miss.

Norman A. Johnson, chairman of the Mississippi Public Service Commission, has announced that he does not believe Southern Bell Telephone & Telegraph Co. can back-bill subscribers who had received reduced rates under a schedule which was ruled invalid (TELEPHONY, Oct. 10).

Johnson said "I can find no record of any such thing ever having been attempted or accomplished in any other state."

Chairman Johnson said he was preparing a full study report on the situation.

The company's action came after this chronology: In 1956 it put into effect, under bond, increases amounting to $2,750,000, after the commission had refused to authorize the new rates. The company then appealed to the Hinds County Chancery Court which ruled in favor of the commission. An appeal to the Mississippi Supreme Court resulted in the higher court upholding the chancellor.

As a result, Southern Bell is preparing to refund 9 million dollars plus 6 per cent interest to Mississippi subscribers.

However, under the bonded rates, some suburban and rural customers no longer had to pay mileage charges. Since this proposed schedule was ruled invalid, the company holds that the reduced mileage rates also were illegal and must be repaid. Notices have been sent to 23,000 subscribers that they will be back-billed. The amount involved is $800,000.

N. C. Company Asks Stock Issue for Improvements

The Morris Telephone Co., Roxboro, asked the North Carolina Utilities Commission on Nov. 9 for permission to issue $250,000 worth of additional preferred and common stock to help finance an expansion program.

The company proposes to issue its preferred stock at $100 per share and its common stock at $30 a share.

The Morris company operates exchanges at Roxboro, Hillsboro, Yanceyville, Efland and Prospect Hill. The company said it plans to spend about $300,000 to expand its facilities during the next 12 months—and "not less than" $500,000 during the next three years.

The company, which asked that no restriction be imposed as to the proportion of preferred and common stock in its $250,000 offering, listed its total assets at $1,168,074 as of last June 20.

It said "the territory included in applicant's service area is experiencing a substantial growth in population, industrial development and erection of home sites and the company is being called upon constantly to expand and improve its telephone facilities so as to provide service to subscribers not now served, as well as to improve its service to present subscribers."

A Morris spokesman added, "This is particularly true as to Roxboro and the area immediately adjacent thereto."

Morris is said to have a commitment from the Life Insurance Co. of Virginia for a loan of $250,000, provided the company sells as much as $200,000 worth of additional stock. Money from the proposed loan and stock issue would go for enlargement of Morris' central office in Roxboro, erection of additional lines and cables, and for expansion of rural service.

Grant Permission to Buy North Dakota Exchange

The North Dakota Public Service Commission on Nov. 9 granted permission to the Dakota Central Rural Telephone Cooperative Association, Carrington, to purchase the Bowdon Independent Telephone Exchange.

The Dakota Central company currently operates six dial exchanges with about 1,400 stations. Howard R. Wolle, Dakota Central manager, reports that in the spring the company plans to build an Edmunds exchange which will provide initial service to over 100 rural residents.

Bowdon is to be converted to dial operation during 1960.

United Utilities Buys Ind. Company in Stock Exchange

The telephone exchange at Urbana, Ind., has changed ownership, it was announced by officials of United Utilities, Inc., who purchased the exchange from Continental Telephone Co. of Washington, D. C.

The purchase agreement, made effective as of Nov. 1, was consummated through an exchange of stock.

Although the exchange will continue to be operated for the time being under its corporate name of Urbana Telephone Co., Inc., it will be under the direct supervision of Jack Clark, LaFontaine district manager for United Telephone Co. of Indiana, Inc., a subsidiary of United Utilities, Inc.

At a later date, the Indiana Public Service Commission may be asked for authority to merge the Urbana exchange with the 74 other exchanges operated in Indiana by the new owners, it was said.

The Urbana exchange, serving approximately 325 subscribers, is the United System's only magneto exchange in Indiana, all the rest having been converted or in the process of conversion to dial service.

General of NW Seeks To Raise Montana Rates

The Montana Public Service Commission has set a Dec. 2 hearing date on the petition of the General Telephone Co. of the Northwest to raise rates.

The company said that in 1958 its rate of return fell to 3.6 per cent.

At the Libby exchange, one-party business service would increase from $10.75 to $13.75 and one-party residence service would be raised from $5.25 to $7.50.

Ask Raise in Florida

A Dec. 2 hearing date has been set by the Florida Railroad & Public Utilities Commission on the rate increase request of the Inter County Telephone & Telegraph Co., Ft. Myers. The Inter County company is asking for a

GRAYBAR NOW FEATURES THE VERSATILE, RELIABLE G-E 6 KMC MICROWAVE

The new General Electric 6 KMC Microwave, now available from Graybar, enables you to plan systems providing as many as 120 channels for communication data or control.

High reliability for low maintenance is built into the G-E 6 KMC Microwave. Evidence is use of the Klystron tube, and use of a transistorized service channel.

Addition of G-E Microwave equipment to our extensive line of quality products again demonstrates that the telephone industry can fill all its communication needs from one convenient source... Graybar.

Phone your nearby Graybar man, now, for complete information.

Also: New G-E Transistorized Progress Line of mobile radios—now available from Graybar—the world's most advanced, smallest, commercial two-way mobile units. 942

See the new G-E 6 KMC MICROWAVE and PROGRESS LINE MOBILE RADIO
— at the Graybar Booth
— at the USITA CONVENTION

GraybaR

ELECTRIC COMPANY, INC.

420 LEXINGTON AVENUE, NEW YORK 17, N. Y. • OFFICES IN OVER 130 PRINCIPAL CITIES

Everything Electrical GraybaR

gross increase in local exchange revenues of $449,514, which will give the company an increase of $212,212 after taxes.

Will Not Renew United Offer, GT&E States

General Telephone & Electronics Corp., through its board chairman and chief executive officer, Donald C. Power, announced on Nov. 12 that it has no present intention of making any new offer to United Utilities Inc. or of renewing the offer that has been previously rejected.

Recently United Utilities announced publicly that an offer by General Telephone & Electronics to exchange ⅝ of a share of General's stock for one share of United Utilities had been rejected by a majority of the board of directors of United Utilities.

Approve Sale of Bell Exchange in Illinois

The sale of Illinois Bell Telephone Co.'s Effingham exchange to the Illinois Consolidated Telephone Co., Mattoon, was recently approved by the Illinois Commerce Commission.

Illinois Bell has petitioned the Federal Communications Commission for authority to discontinue its service in the Effingham area. FCC approval of the sale is required.

The exchange serves about 4,100 stations. It also includes a mobile radio station for service in the surrounding area. The Consolidated company is scheduled to take over the exchange on Dec. 31, 1959.

The same classes of service Illinois Bell offered will be rendered by Consolidated and the same rates presently in effect will be charged.

Approve Increases and Financing in Nebraska

The Nebraska Railway Commission on Nov. 2 authorized the Home Telephone Co., Brady, to increase its rates for Brady, effective with the first billing following cut-over to dial operation.

Increased rates will go into effect at the Home company's Maxwell exchange after it is metallicized according to the order.

The commission also approved the issue and delivery of notes and a mortgage on the Home company's properties.

Register Bonds with SEC

General Telephone Co. of California, Santa Monica, has filed a registration statement with the Securities & Exchange Commission for 30 million dollars' worth of 30-year, first mortgage bonds, it was reported on Nov. 6. The company said that proceeds will be used for construction financing, including possible payment of 18 million dollars' worth of short-term loans.

Formulating plans for preparation and distribution of a community development kit to local managers of Ohio's 98 Independent telephone companies, Ohio Independent Telephone Association representatives met on Oct. 22 at association headquarters in Columbus with Koder M. Collison, Ohio director of the department of industrial and economic development. Left to right are: Richard S. Zachman, public relations information supervisor, General Telephone Co. of Ohio, Marion; Mr. Collison; Joseph R. Yeager, commercial manager, Telephone Services, Inc., Lima; and Daniel W. DeHayes, association executive vice president. Not pictured was Thomas A. Calhoun, special representative, L. M. Berry & Co., Dayton, also a member of the committee. The kit will include a survey of community resources and a plan of action.

Enlarge Ark. Service Area, OK Rates for Tex. Company

The Arkansas Public Service Commission on Nov. 6 authorized the Four States Telephone Co., Brownwood, Tex., to provide service at Hickory Plains and Delaplaine.

The company said it planned to invest $656,000 in plant facilities in its enlarged service area.

Rates were established as follows:

One-party business	$12.50
One-party residence	6.75
Four-party residence	5.25
Rural residence	6.25

General of SW Gets Raises At Four Texas Exchanges

The following rate increases became effective at Texas exchanges of the General Telephone Co. of the Southwest during October, 1959:

Big Lake, CB manual, 1,003 stations, Oct. 11.

	Old	*New*
One-party business	$7.50	$8.50
Two-party business	6.00	7.00
One-party residence	4.25	4.75
Two-party residence	3.65	4.25

Highlands, dial, 1,413 stations, Oct. 1.

One-party business	7.00	10.50
Two-party business	5.50	8.50
One-party residence	4.00	5.25
Two-party residence	3.25	4.25
Four-party residence	2.50	3.50

Huffman, dial, 77 stations, Oct. 11.

One-party business	9.00	10.00
Two-party business	7.50	8.50
One-party residence	4.75	5.25
Two-party residence	4.00	4.25

Plano, conversion to dial, 1,430 stations, Oct. 18.

One-party business	5.40	9.25
One-party residence	3.60	4.75
Four-party residence	2.70	3.75

New REA Borrower Employe Code & Account Handbook

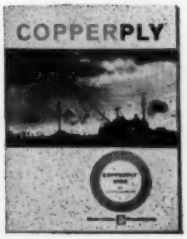
Among publications recently announced by the Superintendent of Documents, Government Printing Office, Washington 25, D. C., is the "Telephone Plant Code and Account Handbook, Class A and B Companies."

Purpose of the handbook is described as follows: ". . . to provide plant employes of REA borrowers with a guide for classifying time, material and miscellaneous expense in accordance with the proper code or account for daily time and material reporting, petty cash expense vouchers, etc. It includes both field codes and account numbers."

Published in 1959, the handbook has 47 pages. Catalog Order Number is A 68.6/3: 1862. Price is 50 cents.

TAILOR-COAT COPPERPLY® CUTS WIRE COST... National-Standard **COPPERPLY** wire for bare or insulated telephone conductors, rural distribution wire, guy and messenger strand is steel wire plated with copper to a uniform, closely controlled thickness by a continuous electroplating process. This method produces an intermolecular bond between copper and steel.

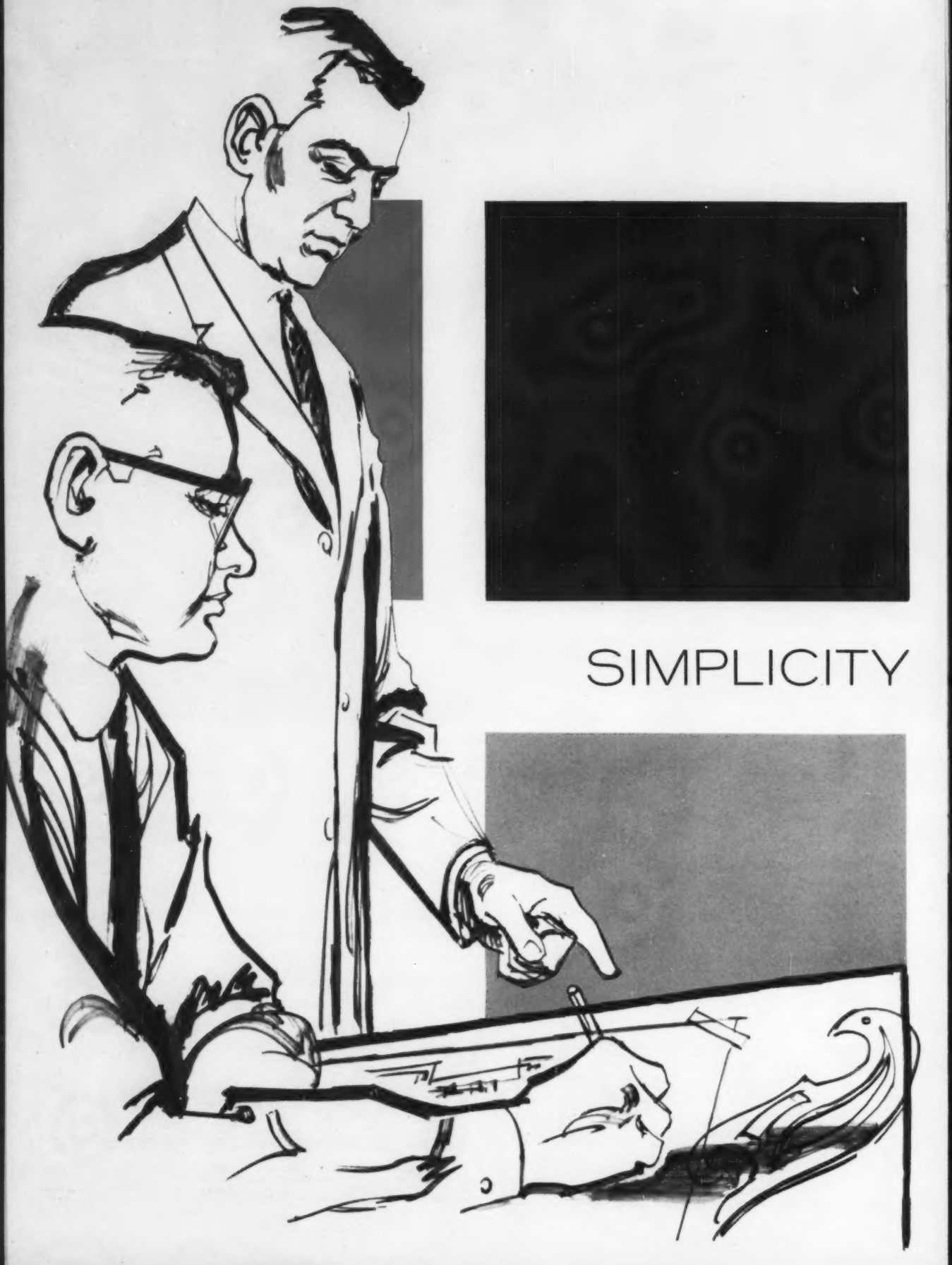
Only **COPPERPLY** by National Standard is available in *a variety of copper thicknesses* that can be tailored to specific industry needs. Whether your application calls for corrosion-resistance, ohm-resistance or strength above standard, tailor-coat **COPPERPLY** is the most economical wire you can use because *you pay only for the copper you need*. National-Standard Company, Niles, Michigan.

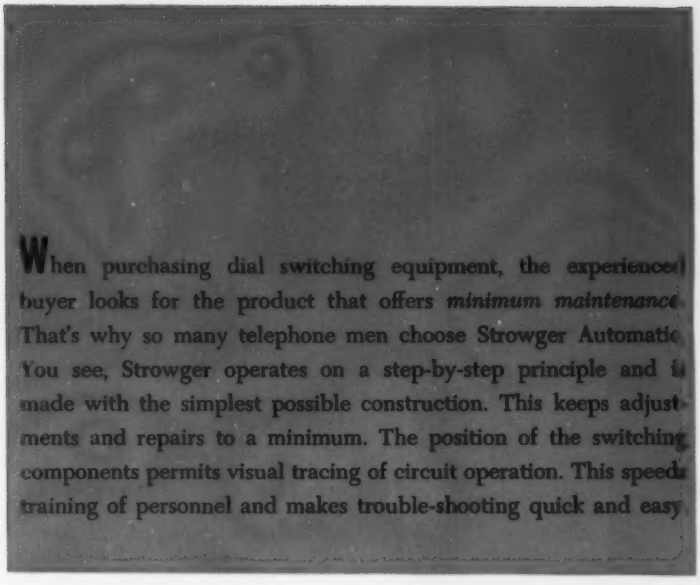


Write for Bulletin 203 that lists full size data, specifications and application photographs.

COPPERPLY
NATIONAL-STANDARD

DIVISIONS: NATIONAL-STANDARD, Niles, Mich.; fine wire, stainless, music spring and plated wires • WORCESTER WIRE WORKS Worcester, Mass.; high and low carbon specialty wires • WAGNER LITHO MACHINERY, Secaucus, N. J.; metal decorating equipment • ATHENIA STEEL, Clifton, N. J.; flat, high-carbon spring steels • REYNOLDS WIRE, Dixon, Ill.; industrial wire cloth • CROSS PERFORATED METALS, Carbondale, Pa.; decorative, commercial, and industrial perforated metals.


SIMPLICITY



When purchasing dial switching equipment, the experienced buyer looks for the product that offers *minimum maintenance*. That's why so many telephone men choose Strowger Automatic. You see, Strowger operates on a step-by-step principle and is made with the simplest possible construction. This keeps adjustments and repairs to a minimum. The position of the switching components permits visual tracing of circuit operation. This speeds training of personnel and makes trouble-shooting quick and easy.

OF DESIGN . . .

another reason why telephone men choose Strowger!

PROVE IT FOR YOURSELF! Visit a Strowger Automatic exchange. You'll see that Strowger offers unsurpassed simplicity in design. You'll also see the craftsmanship and quality construction of this famous equipment. Then get in touch with us. We'll be glad to help you plan for your dial conversion. Write Automatic Electric Sales Corporation, Northlake, Illinois. In Canada, Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16.

AUTOMATIC ELECTRIC GENERAL SYSTEM

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

Obituary

MRS. RAY H. MANSON, 81, of Rochester, N. Y., wife of the former president and board chairman of the Stromberg-Carlson Co., died on Nov. 11 after a short illness.

Mrs. Manson was born in Liverpool, England, and came to this country as a young girl. She lived for several years in Gardiner, Me., and it was there that she met Dr. Manson. They were married in 1903.

That same year, they moved to Elyria, O. where they lived until 1916, when Dr. Manson became chief engineer of the then Stromberg-Carlson Telephone Mfg. Co.

Dr. Manson retired in 1949.

Survivors include Dr. Manson; a son, Stanley H. and a daughter, Mrs. John R. Williams Jr., both of Rochester; a brother, Harry Coley of Elizabeth, N. J.; six grandchildren and two great-grandchildren.

Add 24-Hour Service to 30 Saskatchewan Exchanges

Twenty-four hour telephone service is to be extended to 30 Saskatchewan communities on Dec. 1, C. C. Williams, minister in charge of Saskatchewan Government Telephones, has announced.

"At each of these points there is either a resident medical practitioner or a hospital," Mr. Williams said. "It was on this basis that the selection of exchanges for the extension of 24-hour service was made."

The new service will benefit 2,047 local and 1,093 rural subscribers in the following exchanges: Arborfield, Beechy, Big River, Borden, Brock, Climax, Dodsland, Duck Lake, Frontier, Gainsborough, Glaslyn, Goodsoil, Holdfast, Leask, Leoville, Lestock, Loon Lake, Paradise Hill, Pelly, Porcupine Plain, Prelate, Rabbit Lake, Rockglen, St. Walburg, Sedley, Smeaton, Spiritwood, Val Marie, Vonda and Zenon Park.

One-party rates for the new service will be $2.25 for residence and $3.25 for business.

Colo. Company Manager

Bill C. Berry of Joes, Colo., has been named general manager of the Delta County Cooperative Telephone Co., Paonia, Colo. He was to assume his new post on Nov. 9, succeeding Rex Brown. Mr. Berry was formerly associated with the Plains Cooperative Telephone Association, Inc. at Joes and also has worked for the Inter County Telephone & Telegraph Co., Ft. Meyers, Fla.

Tenn. Company Completes Long-Range Cut-Over Plan

The final step of the Inter-Mountain Telephone Co.'s long range conversion plan went into effect Nov. 1 as the company cut over its last manual exchange at Johnson City, Tenn.

Inter-Mountain Telephone of Bristol, Tenn. is now completely operated by dial equipment, according to Cecil H. Thomas, general commercial manager. The company—with 19 exchanges in Tennessee and 22 in Virginia—operates 103,700 subscriber stations and has a plant investment of over $33,600,000.

Johnson City's new exchange is a 8,400-line, 15,500 terminal-per-station Strowger step-by-step system, manufactured by the Automatic Electric Co., Northlake, Ill.

The system features 2-5 numbering, a 30-position toll board, automatic intercept equipment, and a time announcer with 10 trunks. It also contains an automatic routiner that tests the lines and prints a ticket if trouble is found.

Automatic toll ticketing equipment, which will provide the city with Direct Distance Dialing (DDD) facilities, is also being installed in the company's new office, but will not be cut over until the first half of 1960.

G. E. Creger, Johnson city manager, says the new system serves 15,200 stations in Johnson City and provides extended area service (EAS) to near-by Jonesboro and Limestone, as well as giving toll service to seven surrounding communities.

Johnson City's equipment is housed in a modern three-story building with 45,000 sq. ft. of floor space. The facilities include engineering, commercial and traffic offices, and the switchroom. Traffic personnel have a lunchroom and a quiet room, and the operators' lounge is located on the second floor.

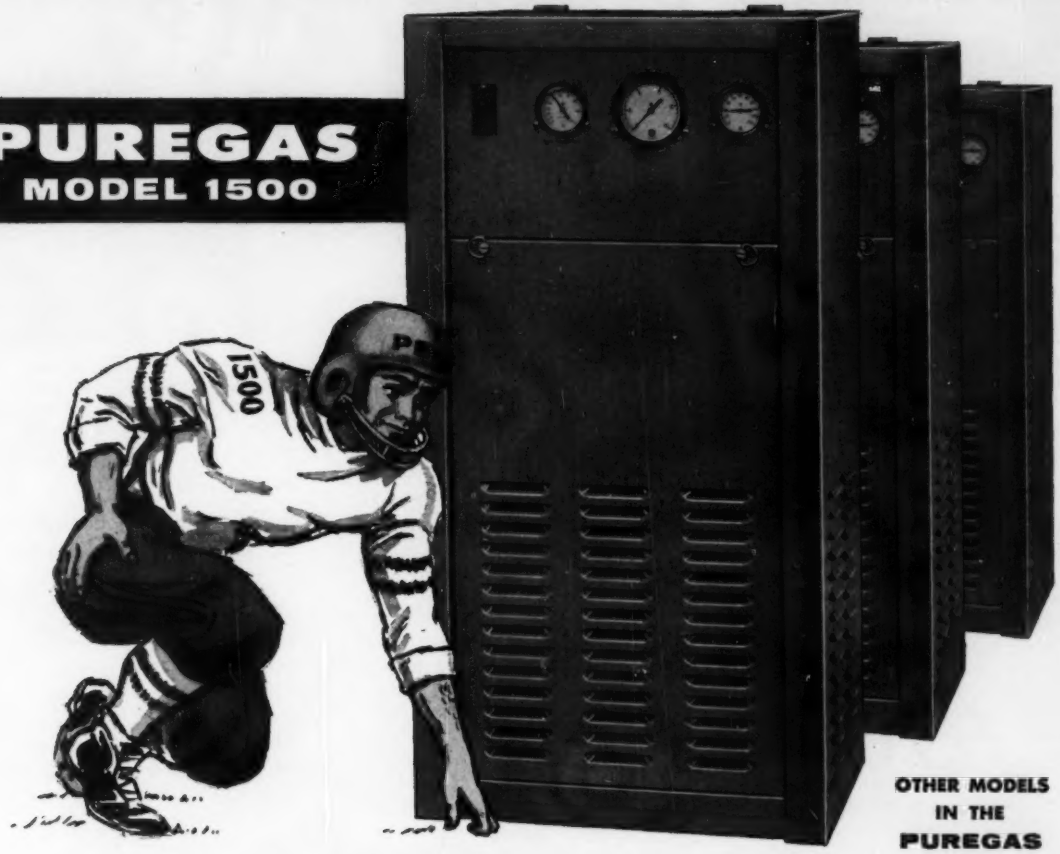
The building and central office equipment involved an expenditure in excess of 3½ million dollars.

A highlight of the cut-over was the official opening of the offices and an open house held Oct. 31 for over 600 guests who toured the company's modern facilities.

LEFT PHOTO: Mayor Ross Spears of Johnson City, Tenn. makes first call on city's new dial system as G. E. Creger, local manager of the Inter-Mountain Telephone Co., Bristol, looks on. RIGHT PHOTO: Completion of Inter-Mountain's long-range cut-over and improvements program was celebrated by the company with the opening of its new 45,000 sq. ft. exchange and office building and an open house on Oct. 31, when more than 600 visitors toured the facilities.

an addition to our line
. . . the RIGHT GUARD for your line!

PUREGAS
MODEL 1500



BLOCK MOISTURE INTERFERENCE

The new PUREGAS 'forward' look includes three new models designed to service all operations from the smallest installation to the very largest system.

With the new No. 750 - 1500 and 5000 models, PUREGAS equipment can now be progressively planned into any size improvement budget. Naturally, wherever PUREGAS goes to work guarding and protecting cables from moisture; service improves, maintenance costs decline and greater profits are reflected.

PUREGAS equipment is self liquidating since it pays for itself in labor savings, reduced cable replacement and greater overall operational efficiency.

If your goal is better service with reduced maintenance costs you should start your planned PUREGAS pressurizing program now.

OTHER MODELS IN THE PUREGAS LINE

MODEL 5000

MODEL 750

Send for Bulletin 110 on gas pressurizing and specification sheets on the above units.

PUREGAS EQUIPMENT CORP.
578 OAK STREET
COPIAGUE, L. I., N. Y.

Signal Corps Procurement Exhibits in Ft. Wayne, Ind.

For the first time the U. S. Army Signal Corps displayed an exhibit oriented directly to procurements at the recent Great Lakes Exhibit, Memorial Coliseum, Fort Wayne, Ind.

A display was constructed consisting of several panels and an information office. On the panels were placed several current radio transmitter-receivers, a field switchboard, a radiosonde, a solar cell unit and parts of these units broken down in order to give a complete exposed view of the major components. The purpose was to show potential prime and sub contractors the parts that comprise these items.

The U. S. Army Signal Supply Agency had up-to-the-minute bid sets and applications for placement on the automatic bidders lists. Three qualified contractor relations specialists, James Weldon, Midwestern Regional Office, U. S. Army Signal Supply Agency; Miss LaVern Lutkehaus, Lexington Signal Depot, and Lee Poss, Decatur Signal Depot were in attendance to give interested manufacturers one-stop service.

In addition, an electronic and mechanical packaging display was constructed which depicted the various packaging methods and how they tie in with the new codes of the Sig Pak Manual. Cut-away models of teletypewriter packaging and of radio equipment packaging were exhibited. The packaging panels were animated to help viewers follow packaging requirements step by step in comparing the Sig Pak requirements against the cut-away models.

For the general public the displays presented a do-it yourself show. The AN/PRC 6 Walkie-Talkie sets on the panels were available for public use. One was placed in a high temperature box, one in dry ice (down to 40° below F) and the last was submerged in water up to the antenna. Visitors could pick up these sets and talk to each other. Many Fort Wayners went home that evening bragging that they had broadcast "from under water."

In another panel a three-dimensional view was achieved which showed various types of wire, cable and radio relay construction across a model terrain. The terrain was illuminated by black light and was very effective. The switchboard was so arranged that visitors could plug in a headset and receive an interesting previously recorded description.

The teleprinter panel had a teletypewriter and printer set displayed in the area and tied into teletypewriter units in another part of the building. Visitors were allowed to type out messages to the visitors on the other set, resulting in the generation of considerable humor and many cliches: "Now is the time for all good men to come to the aid of their party."

Lt. Col. Dwight Langham (center), U. S. Army Signal Supply Agency, and Col. J. G. Bent Jr. (right), U. S. Army, and small-business man viewing part of display by Signal Corps., U. S. Army, at recent Great Lakes Exhibit of Business Opportunities in Fort Wayne, Ind. The Signal Corps procurement system's exhibit was intended to give potential suppliers an opportunity to view parts and components they have the capability for making.

In summary, the U. S. Army Signal Supply Agency said that the basic intent was to give potential suppliers an opportunity to examine parts and components that they had the capability for making and to give them the opportunity of entering the Signal Corps procurement system on the spot.

The U. S. Army Signal Corps plans to participate in a similar Exhibit of Business Opportunities for potential government suppliers within the area of the Southeastern States. The exhibit is scheduled for Dec. 7, 8 and 9 at Birmingham, Ala.

Live Within Income

"While the majority of investors cannot outrun inflation, they can do something to protect themselves against it; that is, they can unite to fight it by demanding prudence in the management of national affairs and by exercising it in the conduct of their own.

"In short, they can insist that the nation not spend more than it earns through production and that their government live within its income."—CANBY BALDERSTON, *vice chairman, Federal Reserve Board of Governors.*

Military Communications Head for Company in Neb.

Boyd M. Wedgwood has been appointed military communications supervisor of The Lincoln (Neb.) Telephone & Telegraph Co. In this position he becomes a staff member of the general commercial superintendent.

He will assist in the planning and ordering of communications facilities required for missile complexes and military installations in the company's 22-county area.

Mr. Wedgwood joined the company in 1937 as a groundman and later was a combinationman and PBX installer before becoming a commercial representative in 1955. He was appointed a service engineer later that year.

During World War II, Wedgwood was a master sergeant with the U. S. Air Force in the European Theatre of Operations.

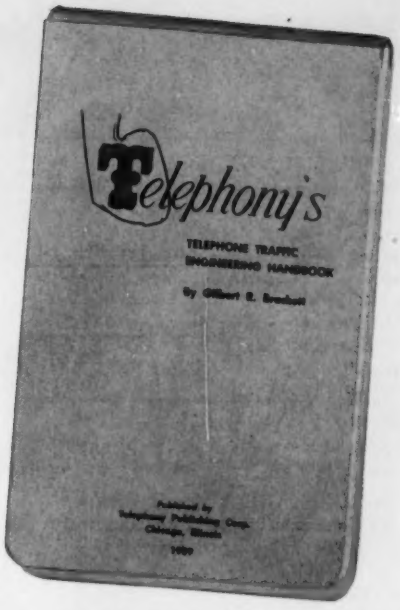
He is a member of the Frank H. Woods Chapter of the Independent Telephone Pioneer Association.

•

Featherbedding a Handicap

"Featherbedding by any definition is a net loss to all America. It puts pressures on our rate structure and bids up prices to all consumers. It is a handmaiden of the ruinous inflationary spiral. It helps impoverish and weaken the railroads, means fewer returns to investors, and a virtual freeze-out of the new equity capital needed to expand and improve plant."—DANIEL P. LOOMIS, *president, Association of American Railroads.*

NOW... AVAILABLE in HANDBOOK FORM!



"TELEPHONY'S TELEPHONE TRAFFIC ENGINEERING HANDBOOK"

By Gilbert R. Brackett

Because of the great demand on the part of telephone engineers, Mr. Brackett's popular series of articles on traffic engineering, published in TELEPHONY over a period of 10 months, has been reprinted under one cover—in the form of a 146-page pocket-sized handbook (4½" x 7¼"). The Handbook is so arranged that additional sheets may be inserted.

TELEPHONY engaged Mr. Brackett to prepare these articles as a result of requests for traffic engineering data from Independent telephone companies. The Handbook is the first complete pocket-sized book on traffic engineering that has been available to the telephone industry.

For the subjects covered, in sectional form, by the Handbook, see the next column.

MORE THAN 1400 COPIES of the Handbook have already been sold for use by traffic engineers and as texts in traffic engineering training courses. All traffic engineers or men responsible for traffic department operations, should have copies of this valuable Handbook.

What is traffic engineering
The traffic engineer's job
The step-by-step automatic system
Traffic engineering assumptions
Line finders
Connectors
Selectors
Second selectors
Level "1" first selectors
Levels "2" and "3"—second selectors
PBX tie trunks
Intercepting trunks
Out dial connector trunks
Conference equipment (PBX)
Reverting call switches
Level "0"—Operator trunks
PBX Level "9"—central office trunks
PBX central office two-way trunks
Repeaters
Incoming selectors
Selectors and connectors—toll
Capacity tables
Assignments of line and station numbers
Customer usage
Traffic surveys
Equipment nomenclature
Miscellaneous traffic information
Traffic load estimating
Distribution of holding time (PBX)
Accepted system standards for ringing and silent periods
Maintenance items to look for on switchboard
Automatic exchange classifications
Traffic information
Inter-departmental cooperation
Judgment methods which assure reasonably good results in engineering
Handling overloads
Traffic engineering short cuts—automatic
Traffic engineering short cuts—manual
Short cut method—toll
Short cuts—power requirements, switch type C.O.E.
Graded multiple
Graded multiple engineering
The traffic unit
Force adjustment
Toll switchboard requirements
Traffic space requirements
Managing your service
Managing peak holiday traffic—toll
Managing your office—automatic
Managing your office—manual
Numbering arrangements
Influence of exchange rate structure on facilities

USE THE COUPON BELOW TO ORDER YOUR COPIES

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608 South Dearborn, Chicago 5, Illinois

Please find check enclosed to cover my order for copies of "TELEPHONY's Traffic Engineering Handbook" as follows:

_____copy (ies) at $2.50 per copy (1 to 50 copies)

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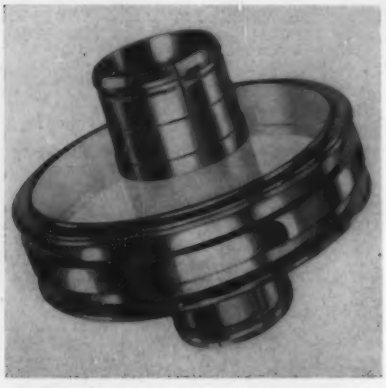
News on New Products

REXOLITE FOR GAS BARRIERS—Rex Corp. is now supplying Rexolite, a high-dielectric constant styrene copolymer, which it says, may be machined to close tolerances (0.005 or less), for use in the engineering of coaxial transmission lines in the nation's furthermost polar defense line, BMEWS (Ballistic Missile Early Warning System).

After extensive testing at the sites, Rexolite is reported to have shown its ability to serve effectively as a gas barrier.

It is, the company says, almost totally impermeable to moisture, resists crazing at temperatures lower than —50 degrees F. and, besides its ease of machining, can be cemented readily.

The close-tolerance machinability of Rexolite is said to be particularly important for the close-fitting of barrier material at null points to prevent moisture contamination of the air surrounding the central duct. Air is the principal insulation for coaxial lines.



The resistance to crazing takes on great import, too, since any cracks or porosity in the dielectric material could change the dielectric constant of the air, making proper functioning impossible.

Rexolite's rigidity and cold flow value also are claimed to be necessary to insure concentricity and rigid positioning. Request NP1223.

•

EARTH-BORER MECHANISM—The utility division of Highway Trailer Co. has introduced a new power-leveling mechanism, now available on two models of its earth-boring machines.

The device, which is claimed to make positioning fast and easy in all directions, is optional equipment on Highway's model HDA and HDAMS earthborers. With dual power-leveling control located at the top, a turn of the mechanism puts the rack bar and derrick in the exact position desired.

This feature, according to the company, permits rapid leveling, where necessary, on guard rail and line construction jobs. Engineered for positioning in any angle up to 90 degrees, the mechanism is said to be good for work in rough, uneven terrain.

It also permits fast maneuvering of the machine fore and aft, left to right, Highway Trailer says. This flexibility makes straight-down drilling easier and quicker regardless of truck position, the report states. Request NP1224.

•

TWO-RIBBON TYPEWRITERS—Remington Electric typewriters are now equipped with both fabric ribbons and carbon ribbons as standard accessories, at no extra cost, according to an announcement by Remington Rand division of Sperry Rand Corp. Previously, carbon ribbon attachments had been available only for an extra charge.

The new two-ribbon feature is said to make it possible for the Remington Electric to serve as an all-purpose machine, functioning equally well in the preparation of distinctive correspondence for photo-offset work, and in the preparation of multiple copy work.

The announcement of the new feature is the latest in a series of improvements engineered into the Remington Electric reported to provide it with speed, versatility, and ease of handling.

By making both ribbons available in one machine, the varying requirements of today's business office are met. A carbon ribbon gives a crisper, sharper, darker impression and frequently is preferred in the preparation of duplicating master plates, Remington says. The fabric ribbon is particularly desirable for bulk production work, where a large number of carbon copies thickens the typing pack.

The carbon ribbon for the new Electric is 1,150 feet long. The machine is reported to feature a sight and sound indicator for both ends of the ribbon.

Remington Rand makes available

(Continued on page 54)

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1223_____; NP1224_____; NP1225_____; NP1226_____;
NP1227_____; NP1228_____; NP1229_____; NP1230_____;
NP1231_____; NP1232_____; NP1233_____; NP1234_____;
NP1235_____.

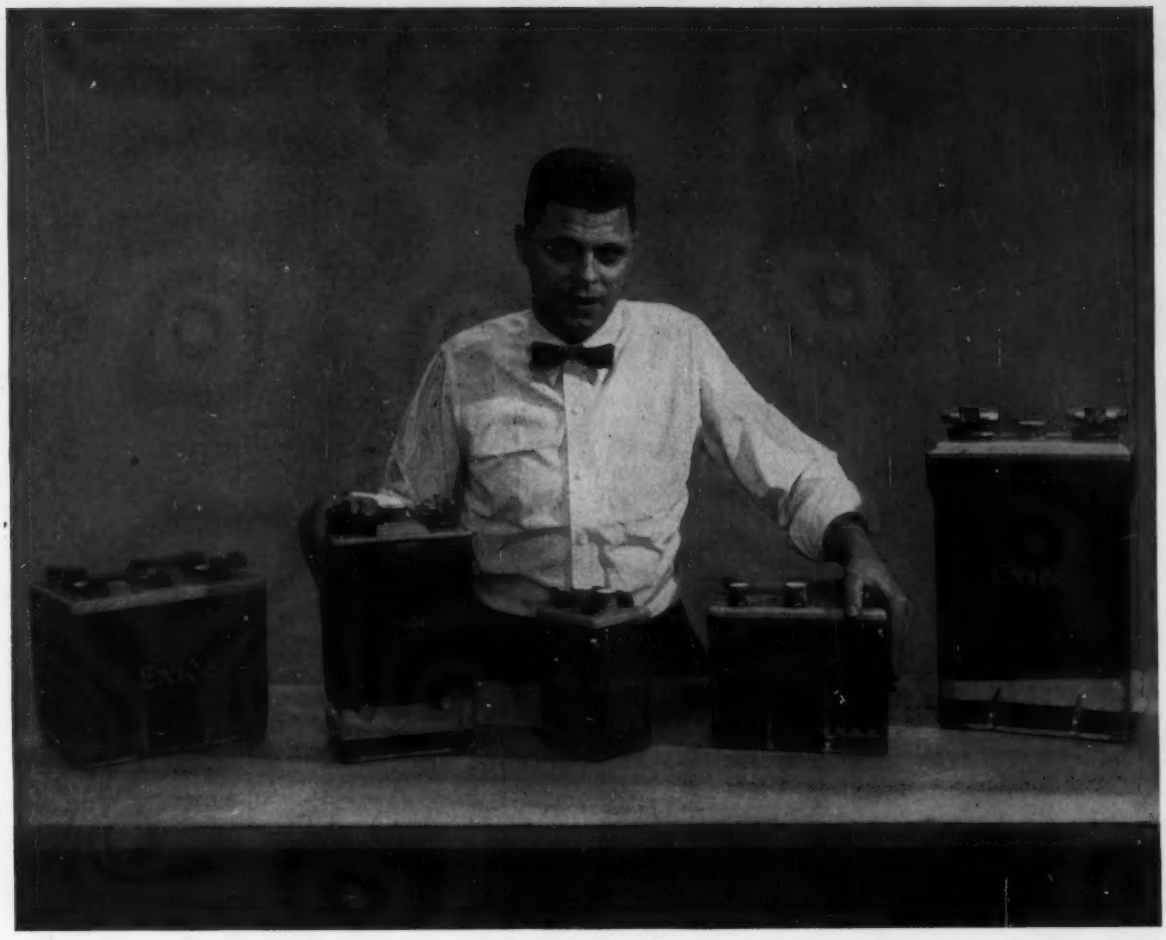
Name.....

Company.....

Street.....

Town and State.....

11/21/59



WOULDN'T YOU RATHER "CHOOSE" YOUR BATTERY?

Exide-Tytex batteries with Silvium grids were chosen by Metamora Telephone Co., Metamora, Ill. Silvium is Exide's patented grid alloy proved up to 100% more corrosion resistant.

That's the surest way to meet your exact requirements. The straight facts are that different applications call for different battery types. But only from Exide can you be certain of getting the best type for you. Because Exide gives you the broadest choice. Exide-Manchex, the plante type unmatched for long life, features Silvium corrosion resistant grids; Exide-Tytex is available with Silvium grids or calcium grids. You choose from the broadest range of capacities in the field. In every case, you know you are getting the extra dependability and value only Exide offers. Buy with confidence. Buy Exide. Rectifier and motor-generator chargers available to cover any application requirements.

For complete information on Exide stationary batteries, write for new illustrated brochure. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

Exide®

What has startled this girl?

She's in one of our current national magazine ads.

The question in the headline has made her gasp—*"How long has it been since you called Mary?"*

For time flies, and very often before we know it *too* much time has flown since our last good chat with a special friend.

But the ad suggests a quick and simple solution.

"Don't let friendships lag," it says, "or the family drift apart. Just pick up the phone and have a friendly visit with those you like and love."

Certainly millions of people throughout the country, in areas served by every telephone company, have friends and family they're momentarily out of touch with.

We hope this ad will jog many of them into doing something about it right now—by telephone.

BELL TELEPHONE SYSTEM

three types of fabric ribbons in varying price ranges. Nylex ribbon is described as producing distinctive correspondence

caulked down over a hard metal cone, filling with lead the drilled hole and all irregularities in the wall. A threaded

53½ inches; and weight: 28 pounds. Request NP1227.

three types of fabric ribbons in varying price ranges. Nylex ribbon is described as producing distinctive correspondence hitherto unattainable with any fabric typewriter ribbon. Rembrandt silk ribbon combines printwork with durability. Cotton fabric ribbons, at somewhat lower cost, have durability and fine writing quality.

Other established standard features of the Remington Electric, according to the company are:

(1) A large variety of distinctive executive type styles available to suit particular typing requirements.

(2) Natural speed slope keyboard, enabling the typist to switch easily to manual typewriters and back quickly.

(3) Automatic repeat on the following keys: underscore-hyphen, vertical line space and carriage return, back spacer, and space bar.

(4) New visible margins. Both left and right margins can be cleared or changed from their previous positions and set where desired, Remington says, at the touch of the finger, without moving the carriage.

(5) Perfect positioning scales for centering of letters, margins and headings with accuracy and without complicated mathematics.

The Remington Electric is available in five colors—French gray, mist green, white sand, desert sage and midnite blue. Optional colors are lime light and honey beige. Request NP1225.

•

THREADED STYLE BOLT ANCHORS — Threaded style "multi-calk" heavy duty masonry anchors for ¼-inch to 1-inch diameter bolts have been introduced by the Rawlplug Co.

Designed for applications where it is desirable to have the bolt head out of the hole, they are reported to make it unnecessary to cut or burn off a protruding stud, should the fixture be removed. They are companions to plain style multi-calks, for head-in-hole applications.

The threaded style anchor is described as consisting of a lead sleeve which is caulked down over a hard metal cone, filling with lead the drilled hole and all irregularities in the wall. A threaded "pilot," or dummy bolt, is used to keep lead from filling the bolt hole.

Both styles, Rawlplug says, are recommended for heavy loads, or where overloads may be expected, and are available with retaining rings for greater holding power, which normally is said to exceed tensile strength of ordinary bolts. Request NP1226.

•

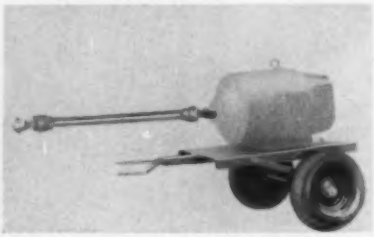
GENERATOR ACCESSORIES — Two new accessories are said to make the 1960 line of Onan PTO tractor-driven emergency generators a versatile, mobile source of dependable electric power.

They are:

(1) A two-wheel trailer, which the company reports was specifically designed and built for easy mounting and towing of Onan PTO generators.

(2) A telescoping-type tumbling rod for quick connection of generator to tractor.

Onan trailer-mounted emergency generators now become a mobile source of standby power insurance against interruption of commercial power for rural



utilities, farms, hatcheries, dairies, or for use in the field, wherever tractor engine power is available, the company announced.

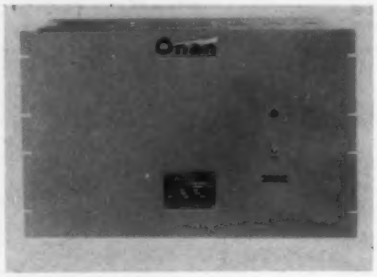
The tractor trailer is made of welded and bolted heavy-gauge steel . . . with an all-steel bed, pre-drilled for mounting either of the three Onan 4, 7 or 12kw PTO generators. It is reported to come complete with clevis-type drawbar hitch; two 4.00 x 8, 2-ply, pneumatic tires and wheel assembly. Dimensions are: Length: 45½ inches; width: 30-1/16 inches; height: 15¾ inches; and weight: 80 pounds.

The telescoping tumbling rod, Onan says, permits faster hook-up of generator to tractor in emergencies and makes precise spotting of tractor unnecessary. The splined universal joint on the tractor end of the road has a quick disconnect feature. The connection is claimed to fit all 1⅜ inch tractor PTO's. Adapters for other sizes of tractor PTO's may be obtained at implement dealers. Dimensions are: Minimum length: 36 inches; maximum: 53½ inches; and weight: 28 pounds. Request NP1227.

•

INVERTER POWER UNIT—A new version of the Instapac, a transistorized inverter power unit developed for microwave communication emergencies, has also been produced by D. W. Onan & Sons, Inc.

It converts battery current to alternating current of the proper voltage and frequency needed, whether the power required is to be of a continuous or emergency nature, and where no interruption in the power source can be tolerated.



Specific changes made in the unit are as follows:

Offered in either 19-inch relay rack mounting with the necessary controls; or optionally in a wall mount cabinet. Previously, Instapac was available only in a floor-standing model.

Available in three input voltages—24V, 36V and 48V.

Offered now with such optional items as a battery charger, meters (dc voltmeter, ac voltmeter, ac ammeter) and an output booster.

At present Instapac is available only in 1 kva size (1.35 kva with booster). However, it can be used, the company says, in combinations for applications requiring greater capacity.

Although it has been designed primarily to work in conjunction with an emergency generating unit to take over critical loads instantly and operate essential equipment until the generating plant can take over, Onan suggests that it can be considered the sole source of standby power for loads up to 1 kva. Request NP1228.

•

COMMUNICATIONS TOWERS—A complete line of high-strength, tubular alloy steel communications towers, providing structures ranging from 10 to 500 feet in height, is now available from Motorola Communications & Electronics, Inc. All towers are reported to meet or surpass Electronic Industry Association windloading and other standards.

The towers are of three-sided sec-

NOMINAL WEIGHTS OF FINISHED WEATHER-RESISTANT WIRE AND CABLE

(Pounds per 1000 Feet)

Conductor Size AWG or Mcm	Copper & Copper Alloy Conductors: URC Type Double Braid	URC Type Triple Braid	Neoprene Type	Polyethylene Type	Aluminum Conductors: Neoprene Type	Polyethylene Type
Stranded						
2	246	270	248	**230**	105	**87.4**
4	155	170	163	**143**	73.3	**53.3**
6	103	115	108	**91.5**	51.5	**35.0**
Solid						
2	239	260	232	**219**	92.2	**79.2**
4	151	164	152	**136**	64.0	**48.0**
6	100	112	101	**87**	45.7	**31.7**

Sources: American Standards Association Specifications

This table shows

POLYETHYLENE covered line wire weighs less

Because it's the lightest, polyethylene-covered line wire is the easiest for linemen to string up . . . hardest for ice and snow loading, gale-force winds to bring down.

Polyethylene-covered line wire, depending on size and conductor, weighs from 5% to 32% less than other types. That's what the figures in the specifications tabulated above show.

This, of course, is no news to linemen who have strung all types of weatherproof line wire. They may not be able to quote pounds and percentages, but they all know you can't beat polyethylene on weight.

Linemen's Favorite Material

Light weight means easy handling, one of the main reasons polyethylene rates tops with installation crews. They also like polyethylene wire because it's clean . . . free-stripping . . . has a smooth, self-lubricating surface that almost makes pulling a pleasure. And despite the exterior slip, the plastic covering hugs the conductor tightly, doesn't ruffle as it goes over crossarms.

"Built-in" Safety Factor

Polyethylene's lightness provides lasting mechanical advantages, since span loads don't tax supports as much as heavier type wire. This "built-in" weight safety factor pays off when violent storms push aerial construction to strain limits . . . when ice and snow loads topple heavier lines.

An added factor in polyethylene wire's ability to stay up under adverse conditions is its smaller diameter. It offers less resistance to wind, a smaller surface for ice build-up.

Winning Combination

Called the "closest to the ideal covering for line wire," polyethylene is outstanding in other respects too. The shield it forms over wire is continuous . . . tough . . . resistant to aging, weathering, moisture, abrasion by lashing branches. It's good for decades of superior service marked by fewer outages, minimum maintenance.

When you order covered wire and cable, make sure the coating is made with PETROTHENE® polyethylene resins. PETROTHENE polyethylene costs no more, but it gives you premium weather and stress-crack resistance.

Polyethylene's advantages are outlined in an informative new U.S.I. data sheet, "Polyethylene . . . The Best Line Wire Covering." Also available is a data sheet showing properties, applications and specifications of PETROTHENE polyethylene compounds. Send for your copies today.

U. S. Industrial Chemicals Co.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.

Please send me:
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☐ "PETROTHENE Resins for the Wire and Cable Industry"

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Company:_____

Address:_____

City:_____ State:_____

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Division of National Distillers and Chemical Corp.
99 Park Ave., New York, 16, N. Y.
Branches in principal cities

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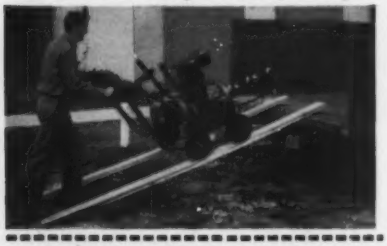
Unsolicited performance reports from actual users state that POW-R-SPADE narrow trenches cost only 1 cent to 3 cents per foot, *including labor.* (Many report much less than 1 cent per foot.) Digging speed varies from 1½ ft. to 17 ft. per minute depending on soil conditions. POW-R-SPADE is light, rugged, with minimum of maintenance. Shipped *completely* assembled. Neat, fast, professional trenches—3 in. wide to 24 in. deep, or 4 in. wide to 18 in. deep Send coupon today.

One man can transport from job to job.



Stampings, Inc., 321—24th St., Rock Island, Ill.
Please send literature on POW-R-SPADE:

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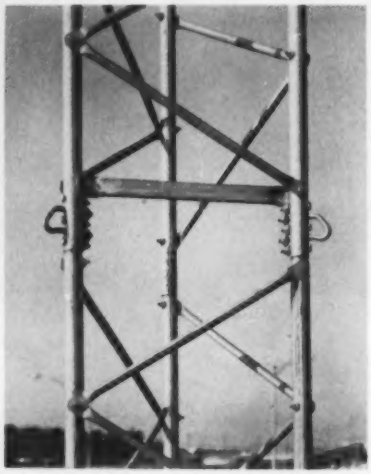
COMPANY

STREET

CITY STATE

tional design. The sections are 10 or 20 feet long and in four weights. The heaviest towers, Motorola says, can be raised to 500 feet with 30 pounds per square foot windloading, or up to 360 feet with 40 pounds per square foot windloading. Guys are specified for the towers that are more than 100 feet high in the heaviest models, and for lesser heights in the lighter models.

All tower components are "hot dip" galvanized steel claimed to insure protection against the elements. The tower sections are galvanized before being rolled and welded. The welds are sprayed with molten zinc. Samples of all sections are described as having undergone "destructive testing" to make certain they are of maximum strength.



Sections are said to be designed for easy assembly and are fastened by drive fit, high carbon steel bolts. All accessories, such as necessary lights, guys, clamps, anchors and assembly hardware, are shipped with each tower.

Motorola reports it has available a complete installation and maintenance program with the new line. A network of strategically located installation and maintenance crews has been established throughout the country.

One to five-year maintenance contracts are said to be available. All towers, including erection, when specified, are backed by a five-year Motorola warranty. Request NP1229.

•

HIGH VOLTAGE SPLICING TAPE—A newly developed and improved version of their No. 30 high voltage splicing tape is now being manufactured by Bishop Mfg. Corp.

The new No. 30 is distinguishable from the former product by its light grey color and white Holland cloth separator, the old version having had a darker color and varnished cambric separator.

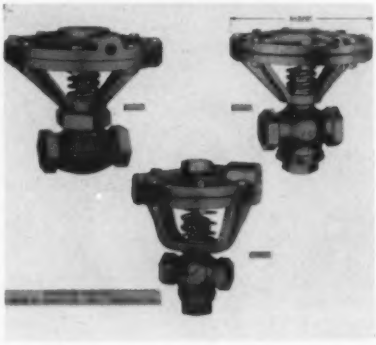
Aside from the physical changes in the product's appearance, this Butyl rubber base tape now is said to provide outstanding tensile strength, a high degree of surface tack and fusion, good cold weather handling characteristics, and good storage stability.

It is reported to meet ASTM Specification D-1373 for ozone and corona-resistant insulating tapes. Its maximum operating temperatures are 90 degrees C up to 5 kv and 85 degrees C up to, and including 17 kv.

On application, Bishop No. 30, according to the company, fuses into a homogeneous, moisture-proof wall which equals or betters the original insulation. The tape is available in several standard widths, with special sizes on request. Request NP1230.

•

"BANTAM" CONTROL VALVES—The George W. Dahl Co., Inc. has announced that the 2020, 2030 and 2031 series of "Bantam" valves are now standard items in the Dahl line.

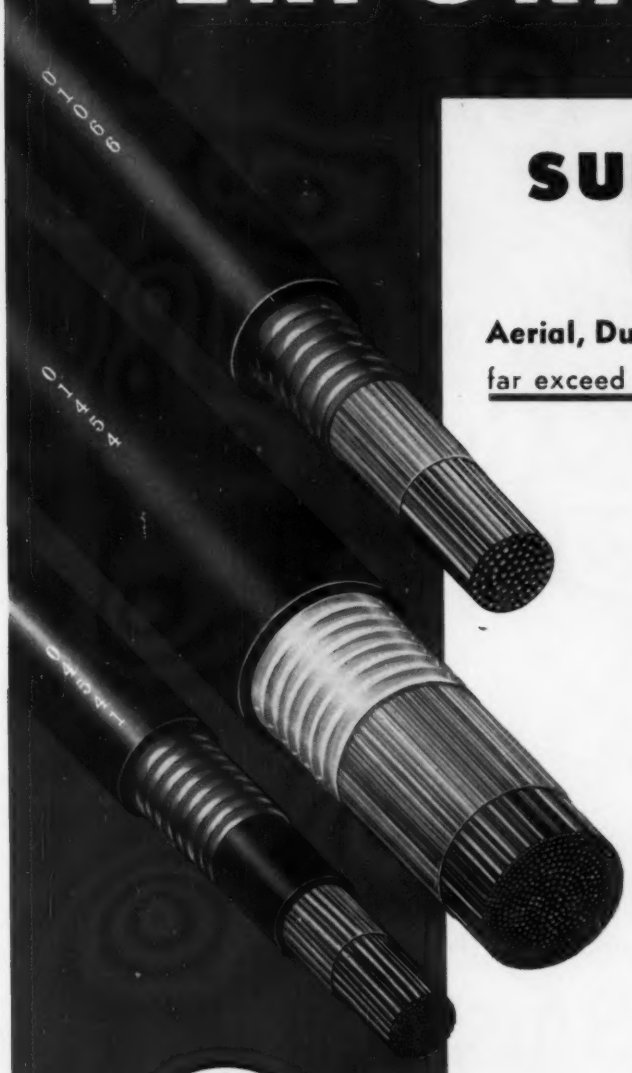


These bantam valves are compact, diaphragm-operated on-off valves. Each is said to feature the ruggedness and high quality of larger valves; yet, each is miniature in size and is claimed to allow savings in space, weight, cost and maintenance.

The 2020 series has a cast globe body

(Continued on page 59)

Packed Full of PERFORMANCE



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Aerial, Duct and Direct Burial Cables

far exceed current industry specifications!

CHECK THESE QUALITY FEATURES:

- High molecular weight polyethylene insulation over soft-drawn pure copper condutors.
- Brighter, better color definition permits easier and quicker identification of color-coded pairs.
- Individual pair twists guarantee maximum protection against cross talk.
- Tough, high dielectric 5 mil Mylar* core tape guarantees further improvement in electrical and physical characteristics.
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- Highest quality high molecular weight polyethylene extruded outer jacket.
- Sequential foot-marking, if desired.

Step-by-step electrical tests through all manufacturing processes guarantee maximum electrical quality. And to provide maximum flexibility without fracturing the shield, CORRUGATED SHIELDING is available in all cable sizes from 6 to 900 pairs!

*Registered DuPont T.M.

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SUPERIOR CABLE CORPORATION, Hickory, North Carolina

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that blows good!

We are always glad to serve your smallest need and happy to keep a weather eye out for your future requirements. So stay with the XY® front and be sure of fair breezes and cloudless skies!

Gerald Gaydos is one of our barometer watchers at our Chicago "good weather station."

with 8, 15, or 50 square-inch reverse or direct-acting operators. Rated for 150 psi steam and 300 psi liquids and gases, according to Dahl, this bronze body series has three different plug trims for on-off, quick-opening or moderate throttling control. It has a maximum Cv of 40.0, lift ⅝ inches, seat areas up to 3.1 sq. in. and connections ¼ inch to 2 inch N.P.T.

The 2030 series is similar to the 2020 series, the company says, except for its reverse-acting plug which is held closed by spring compression. Maximum Cv, lift, seat areas, and connections are the same as the 2020 series.

The 2031 series is a three-way valve for diverting, blending or selecting. It has a cast bronze body and operators with 8, 15, or 50 square-inch diaphragms. It is reported to be rated for 150 psi steam and 300 psi liquids and gases. Connections range from ½ inch to 2 inch N.P.T.

Dahl bantam valves are claimed to have excellent flow characteristics, low hysteresis and fast response. Use of Teflon packings, Dahl says, eliminates frequent packing adjustment and greatly reduces maintenance. Request NP1231.

•

ALUMINUM-RUNG LADDERS— Aluminum rungs, available for the first time on Himco Fiberglas ladders, have combined with other developments to produce a ladder of greatly increased strength and safety the manufacturer, Hopfeld Industrial Mfg. Co., says. A

final test on this new aluminum rung is shown in the accompanying photo. The car is pictured hanging from a section of Fiberglas side-rail and aluminum rung, which has been bonded to the side-rail with Himco's bonding process.

The automobile used weighs 2,425 pounds.

To balance the motor, which is in back, Himco added 275 pounds in the front trunk.

This weight along with the weight

of the steel frame used to lift the car gave a total weight of 2,800 pounds. Added next was a man weighing 190 pounds, giving a grand total of 2,990 pounds. The ladder used is the Himco four-in-one combination ladder, 10 foot size, which is said to weigh 35 pounds. Spread at the bottom of the ladder was 85 inches.

The rope used is the same Hopfeld says it uses on standard extension ladders—polypropylene. This rope is easier on the hands than manilla rope and will not shrink when wet. Breaking strength is 2,300 pounds for the 5/16 inch diameter rope.

In another test, a dynamometer was used to measure the pull needed to pull the aluminum rung out of the side-rail. The maximum pull the hoist would tolerate was used, Himco reported, (3,100 pounds), and the rung could not be pulled from the side-rail.

The test was witnessed by M. N. Ruggles and T. E. Gunning of the Roseville Telephone Co., Dale Evans of Sherman Mitchell Co., and Mr. Makemson of Santa Rosa Fire Nozzle Co.

Another test made was the rung torque test. Approximately 700 inch-pounds were applied, Hopfeld reported, but the rung did not turn in the side-rail. In fact, the aluminum squeezed together under this extreme test, but did not turn.

Twisting or "walking" the ladder is said to have no effect and will not loosen the rungs. Under normal conditions there is no side sway. The weight of the ladder remains approximately the same. A 14 inch span of aluminum rung, when tested for breaking strength, tested at 1400 pounds.

Safety features of the Hopfeld ladder are listed by the company as follows:

Non-conductive.
Hardwood core permanently imbedded in Fiberglas channels.
Safety lock with rope on side of ladder.
100 per cent splinterproof.
Properly sized side-rails for controlling hand grip.

Durability assets of the ladder are said to include:

Strong, shock-proof rungs.
Immunity to weather, corrosion, acid.
Rungs bonded under precision press fit.
Plastic memory preventing sagging or going out of shape in use or storage.
Improved rope with lower conductivity and less absorption.
Bonded and riveted guides.

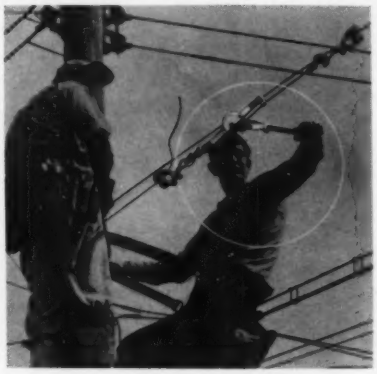
The new lock is reported to give complete control over the ladder. It is lightweight, yet can be raised and lowered away from wall. Other features include: height adjustment and rung lock both controlled and activated by rope; no increase in weight in rainy weather; rung welded to both locks operates as a single unit; floats in water.

In addition, the ladder is claimed to require no maintenance, painting or varnishing. It has a bright yellow color which is locked in for life and the rungs are replaceable.

The ladder comes in straight and extension styles. Request NP1232.

•

MANUAL HOIST PULLER—An improved 1½-ton capacity Power-Pull manual hoist-puller is reported to be in production at American Gage & Mfg. Co. The new model, with 3/16 inch preformed aircraft cable, is said to weigh 7½ pounds but enables one man to lift, lower, or move over 3000 pounds. Each unit is tested to 50 per cent overload.



A new feature, the company says, permits complete cable replacement in the field in minutes with only a hex socket wrench needed to remove a set screw. The new method of attaching the cable, by swaged sleeve and tapered 9/32 inch hole, has been tested to equal in strength other parts of the device.

All stress points are high tensile strength manganese bronze, frames are steel.

The ¾-ton and 1-ton Power-Pull models have been redesigned, according to the report, to include the cable replacement feature. Attachments and adapters are available for special uses on specific jobs.

Wire grips are claimed to adapt Power-Pull for stringing line or stretching wire and fence. Among other uses are included installation of strain carriers and transformers, hoisting of work platforms, and handling reels. Request NP1233.

•

FREQUENCY SELECTIVE VOLTMETER—Rycom Instruments, a division

American Beauty...an iron for every Soldering Job

Whatever your soldering problem, American Beauty has the right iron for your particular job. The finest engineering, best materials and on-the-job experience since 1894 is yours with EVERY American Beauty. There is a right model, correct tip size (¼" to 1⅛") and proper watt-input (30 to 550 watts) to do any soldering job. Ask about which iron will do your job best. American Beauty electric soldering irons are the highest quality made.

ILLUSTRATED IS CATALOG NO. 3125
¼" TIP SIZE, 60 WATTS

TEMPERATURE REGULATING STANDS
Automatic devices for controlling tip-temperature while iron is at rest—prevent overheating of iron, eliminate frequent retinning of tip, while maintaining any desired temperature. Available with heavy-gauge perforated steel guard—protects user's hand.

YOU CAN'T BEAT A SOLDERED CONNECTION

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WRITE FOR 28-PAGE ILLUSTRATED CATALOG CONTAINING FULL INFORMATION ON OUR COMPLETE LINE OF ELECTRIC SOLDERING IRONS—INCLUDING THEIR USE AND CARE.

AMERICAN ELECTRICAL HEATER COMPANY
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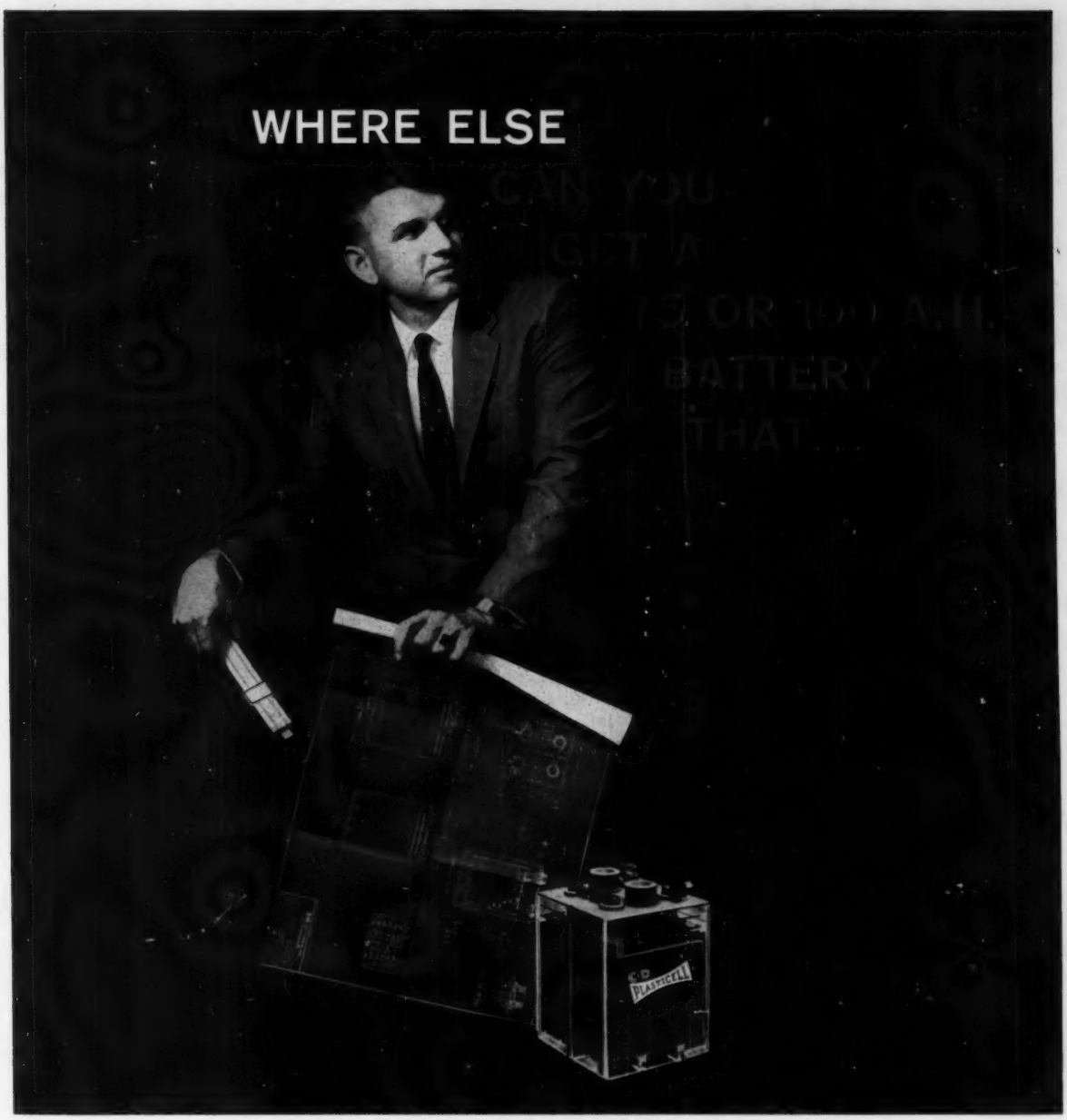

Pictured above is one of the newest additions to the C&D PlastiCell line—2D-100.

...gives you all these features?

FULL .266″ PLATES (not just .156″ or .220″)—No skimping. No shaving. No untried ways. Just the thickest, heaviest plates in the industry. Here's extra-life—*plus.*

TRIPLE INSULATION (not just dual)—"Power particles" can't shed away. Thick Fiberglas mat, microporous separators, and perforated vinyl retainer keep active material at work for you.

14-YEAR LIFE IN FULL FLOAT SERVICE—Thickest plates . . . triple wrap . . . suspended and supported construction—all in a transparent, shock-resistant plastic jar. Long, trouble-free life . . .

C&D PLASTICELL—Where can you get it? Ask your nearest C&D representative—or specify the battery by name to your telephone equipment supplier.

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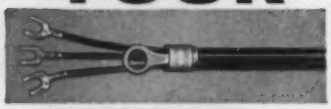
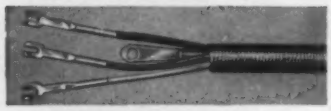
YOUR



BEST



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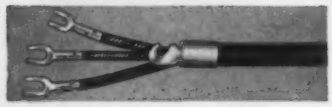


Are you familiar with the features of these fine cords?

NEOPRENE covered cords are a highly serviceable cord, extensively used in a wide variety of services. They are moisture and grease proof . . . easy to keep clean.

NYLON covered cords are a relatively new development in telephone cords. Their fine smooth texture makes them the preferred cords for switchboard use. They give long service. Preferred by operators because of their fast, easy handling.

COTTON cords are in standard use everywhere. Their fine woven wrap makes them very serviceable for all around purposes.

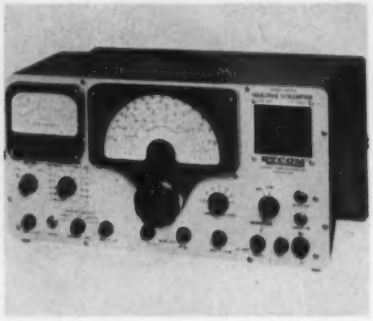
Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry a large stock of cords for every purpose.

Our geographical location means QUICK SERVICE.

RUNZEL
Cord and Wire Co.
1723 W. MONTROSE AVE.
CHICAGO 41, ILL.

of Railway Communications, Inc., announces the release of their newest frequency selective voltmeter — Model 2171A.

The Model 2171A selective voltmeter is reported to be a highly selective



measuring instrument employing the heterodyne principle with balanced modulation. It offers a fast and accurate means of making amplitude measurements throughout the frequency spectrum of 50 cycles to 6 kilocycles. This instrument, according to Rycom, uses a highly selective crystal filter to achieve the resolution necessary for amplitude measurements of microwave subcarrier, wire line communications and subcarrier telemetering systems. The Model 2171A is available with a 30 cycle or 50 cycle crystal filter for amplitude measurements.

The features of this voltmeter are said to include a gear-driven dial mechanism, and a balanced input transformer with circuits provided for 135-ohm, 600-ohm, or bridging inputs. It also has a tuning range of 50 cycles to 6 kilocycles with metering circuits for indicating levels from a —80 dbm to +32 dbm with accuracies of ±.5 db. Provided as well is an internal speaker and headset jack for aural monitoring of signals. An internal oscillator and associated circuit are included for a fast and accurate means of making amplitude calibration.

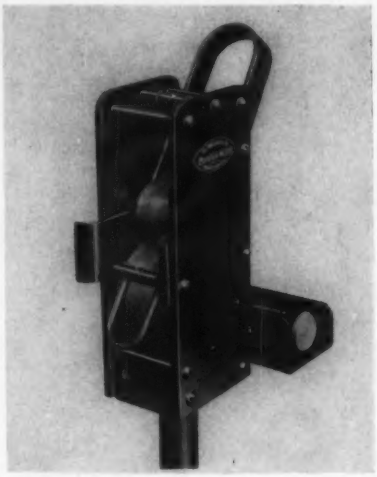
This instrument, the company says, is supplied in a portable carrying case with a cover compartment for storing test leads or associated tools. Total weight is 28 pounds.

It operates on normal line voltage of 115V ac 50/60 cycles and requires 48 watts of power. Request NP1234.

•

CABLE MEASURING METER—Easy and accurate measuring of heavy, large-size cable is reported by Hykon Mfg. Co. through the use of its improved cable meter. The model HCM has a direct-drive Veeder-Root counter, calibrated in feet and inches. The meter measures up to 1,000 feet and has instant zero-reset.

Proper spring tension is said to be maintained on the measured material to prevent slippage and "shrinkage," with a release handle to permit free insertion and removal of the cable. Added features of the Hykon HCM, according to the company, include: A swivel wire guide adapter built in for measuring small wire sizes and a floor-type meter stand adjustable from 30 inches to 48 inches in height.



MODEL HCM is 12 inches high x 7 inches deep x 7½ inches wide. Shipping weight is 12 pounds. The bench mount measures 14½ inches x 10 inches x 2 inches high. All parts are finished in green industrial enamel. Request NP1235.

General of Indiana Reports Shift of Four Executives

Four executive changes affecting the northeastern division of the General Telephone Co. of Indiana, Fort Wayne, were announced, effective Nov. 2, by General's President L. H. Meyer.

Harry G. Counsman, recently director of personnel, was named division manager, succeeding D. H. Buesching, who became district commercial manager.

The former director of personnel for General of Michigan, H. M. Borys, was appointed to the post of director of personnel, northeastern division, General of Indiana, as successor to Mr. Counsman.

The southern division manager at Connersville, Ind., G. A. Richwine, was named division plant manager at Fort Wayne, replacing B. B. Haney, who became plant administrative assistant.

E. H. Gochenour, formerly district sales manager at Fort Wayne, was transferred to the marketing and sales

department as unit sales manager at Lafayette.

Mr. Counsman joined the General Telephone System in Pennsylvania as revenue accounting manager in 1933 and became director of personnel for General of Indiana in 1956.

Mr. Borys served as director of personnel for the General System in upstate New York, from 1953 to 1956, when he was transferred to the General Telephone Co. of Michigan in the same capacity.

After beginning his telephone career in Elkhart, Ind., in 1937, Mr. Richwine became manager of the southern division, General of Indiana, in 1953.

Mr. Haney, a native of Albion, Ind., is a 40-year telephone industry veteran.

Mr. Gochenour started with General in 1948, and had a background of service as district commercial manager at North Manchester, Connersville and Elkhart, Ind., before going to Fort Wayne in 1956.

Another native Hoosier, Mr. Buesching was born in Fort Wayne, and began with the company in 1930. He worked in the revenue, accounting and commercial departments before becoming division manager.

O. Bell Man Rescues Fire Victim, Gets Vail Medal

John D. Rung of New Castle, Pa., an installer in Youngstown O., for the Ohio Bell Telephone Co., was recently presented with the bronze Theodore N. Vail medal and $250.

Last Jan. 31, Mr. Rung rescued a neighbor from the man's burning cottage near Lakewood, Pa. Learning that the man was asleep inside, Rung battered in the locked door, and crawled through the smoke filled house, until he found the victim unconscious on the floor.

After dragging his neighbor outside, and carrying him to an adjacent house, Rung used artificial respiration to revive him. When firemen arrived with oxygen, Rung hurried off to help fight the blaze.

Expand Through Work

". . . in recent years . . . our dollar has lost half its value. If that continues . . . it is going to be disastrous for our kind of economy and for the welfare of our people; and the expansion of your economy is not going to come out of (federal) spending. The expansion is going to come from the incentives that we give to our people for working hard, using their brains, and keeping what they can earn as much as possible, so they spend their money themselves."—DWIGHT D. EISENHOWER, *President of the United States.*

CONDEX MULTIPLE CONCRETE CONDUIT

SPOTTING OF CONDUIT ALONG RIGHT-OF-WAY ADJACENT TO PROPOSED TRENCH

NOW AVAILABLE IN ALL THESE SIZES: 2, 4, 6, 8 and 9 DUCT

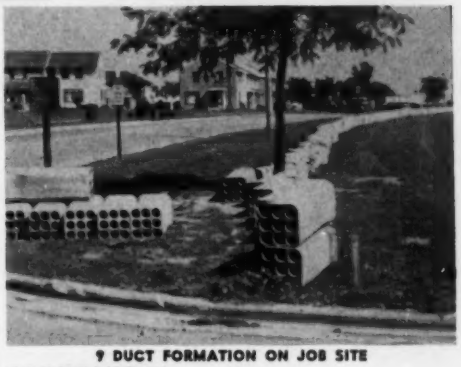
Special fittings—miters—short lengths—expanded web sections available, also adapters to claytile, transite and fiber duct.

CONVENIENT

Delivery can be made to jobsite on 24 hours notice. Condex may be installed in any weather, even in trenches holding water. Ditches can be covered as soon as installation is made. Due to low breakage factor, jobs can be estimated more accurately.

STRONG

Pittsburgh Testing Laboratory tests show: compressing strengths of 10,000 lbs. PSI; water absorption of 3.9%; load test-failure at 74,000 lbs. From a telephone company report on Condex multiple-duct concrete conduit—"it is obvious that no trouble was experienced in cable placing operations, no evidence of excessive abrasion on the lead sheath." Smooth bore is obtained by mechanical honing.



9 DUCT FORMATION ON JOB SITE

ECONOMICAL

Multiple-Duct Concrete Conduit is manufactured with a bell-end joint, eliminating the use of plastic or mortar bandages with dowel pins, for joining. A joint sealing compound, applied with a pressure gun, is all that is needed and cost of this joining operation is less than 3½c per trench foot for both material and labor.

Single crews have installed 1,600 to 1,800 trench feet of conduit per 8 hour day, with two to three less men than with other types which require mortar bandage joints.

Breakage factor of concrete conduit is less than 1%, due to strength of product.

FOR FULL INFORMATION—CALL OR WRITE YOUR LOCAL LICENSEE, OR THE PARENT COMPANY

CONCRETE CONDUIT CORP.
130-01 Northern Boulevard
Corona, New York
Illinois 7-1515

CHICAGO PRE-CAST PRODUCTS CORP.
9400 West Belmont Avenue
Franklin Park, Illinois
Gladstone 5-8116

UTAH CONCRETE PIPE CO.
379—17th Street
Ogden, Utah
Export 2-7513

ELMORE CONCRETE PRODUCTS CO.
Div. of North Star Concrete Co.
Elmore, Minnesota
Elmore 52

EMPIRE CONDEX, INC.
6700 Mad River Road
Dayton, Ohio
Tuxedo 5-7051

WESTERN CONCRETE PIPE CO.
3501 Power Inn Road
Sacramento 19, California
Hunter 6-0026

T. E. L. PRE-CAST PRODUCTS CORP.
1 Industrial Avenue
New Smyrna,
Edgewater, Fla.
Gardea 8-9881

J. E. EVANS CONCRETE PRODUCTS CO., INC.
Shelbyville, Indiana
Express 8-9734

AMERICAN CONCRETE PIPE CO.
(Sub. of Amer. Pipe & Construction Co.)
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Phoenix, Arizona
AL 2-7566

PRE-CON LTD.
Orenda Road
Brampton, Ontario
Canada
BU 6-3042

CONDEX

GAGNE ENTERPRISES, INC.
29W 629 NORTH AURORA ROAD
NAPERVILLE, ILLINOIS
NAPERVILLE 2700-2701

ARMY COMMUNICATIONS AND THE TELEPHONE INDUSTRY

Continued from page 22

facilities of such companies can be integrated smoothly with those of the Army in the event of a national emergency or disaster.

Other Systems

Also linked closely with national defense are the commercial communications systems associated with Army air defense control and direction. These systems of wire and radio circuits integrate Army missile batteries and other elements within 22 local defense areas of the United States—servicing nearly 250 missile batteries and associated radars, and command posts. The Army missile batteries are provided with leased intra-battery cables, which connect the control area with launching sites and carry the electronic signals that launch missiles from each battery.

In addition, data circuits and internal communications facilities for each of the large Army air defense *electronic control centers* — known as MISSILE MASTER—are provided by commercial companies.

One of these, now in operation at Fort George G. Meade in Maryland, is the Army air defense control center for the Washington-Baltimore military-industrial complex. Additional MISSILE MASTERS will shortly be in operation to protect the metropolitan areas of New York and Seattle. Seven more MISSILE MASTERS are scheduled for installation near other key defense areas and population centers of the United States during the next two years.

Integrating these and other elements of the entire Army air defense command is a teletypewriter network, which is a leased commercial system composed of about 15,000 circuit miles and linking nearly 100 pieces of teletypewriter and cryptographic equipment.

Also utilizing facilities and equipment provided by the telephone industry is another special type of Army network, which is directly associated with Project MASS—the Modern Army Supply System.

This network—known formally as the Army Switched Data and Secure Voice Network—integrates data transceivers, which electrically transmit requisitions and related supply data *in punched card form* between key points of the Army supply system. This makes possible automatic data processing, selective stockage, premium transportation, and rapid communication between key supply points of the U. S. Army.

The network consists of 110 separate installations and five manual switching centers. Equipment and facilities at the five switching centers, trunk lines connecting the five centers, and circuits between these centers and the 110 transceiver installations are all leased from commercial communications companies. The network handles a total monthly *trunk* traffic of about 3.5 million cards, and monthly *local* traffic of more than 1 million cards. In addition, the network is used to control personnel, intelligence, and transportation information.

L'Envoi

These are only a few of the many significant contributions made to Army communications by commercial carriers and other components of the telephone industry.

Although conventionally accepted in the light of today's advanced technology, these contributions are more remarkable when compared with the telephone facilities at an Army post of 1899.

LOOK TO THE LEADER...
LOOK TO LINDSAY

FOR RELIABILITY • SERVICE
• NATIONALLY KNOWN TELEPHONE SUPPLIES

Lindsay knows from years of experience that telephone companies cannot compromise on supplier's quality. Reliability, service, and lines—all must be outstanding. This knowledge has played an important part in the Lindsay tradition of leadership.

THE LINDSAY TELEPHONE SUPPLY CO.
390 East Highland Road, Northfield, Ohio • Tel. Imperial 7-7181

Things were different 60 years ago—according to the late Walter R. Taylor, who served more than 50 years as enlisted man, officer, and subsequently as civilian engineer.

Said Mr. Taylor a few years ago:

"I've seen the Army Signal Corps expand from a small force of Morse telegraphers and wig-waggers to a great scientific organization.

"I've seen large Army posts, years ago, without a single telephone. And I've seen a commanding officer at Fort Monroe, Va., proceed at quick-time from his quarters to post headquarters, about a quarter of a mile away, to answer a call on the only commercial telephone on the post.

"I've lived to see, during my span of service, communications of the Army Signal Corps grow to such a degree of perfection that a telephone is now placed on practically every desk of most Army administrative offices."

This and other progress has been possible only by the many contributions of the telephone industry during more than seven decades of military-industry cooperation.

The excellent relationship that today exists between the Army and the telephone industry has been progressively advanced by these years of working together on related problems, a mutual respect for technical and professional abilities, and a common interest in advancing the art and science of communications.

IN THE NATION'S CAPITAL

Continued from page 20

importance of corporate donations to the success of the community fund drive. Speaking of this year's campaign, he said that it was a critical effort to meet requirements after *14 years failure.* Already, deficits incurred in previous years have written a shameful record of curtailment of vital agencies. Mr. Clarke continued:

"We decided on an all-out, do-or-die attempt to see if Chicago would support its private charities. The alternative—if Chicago industry doesn't support private charities, it will have to be done by the government and bring us closer to a welfare state. In my opinion, it would mean an increase in taxes."

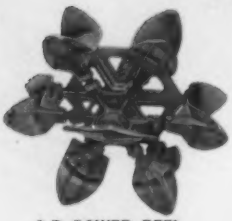
Clarke confirmed that Illinois Bell is not the largest corporate giver. He noted, however, that over 2,000 Chicagoans are now wearing "1 per cent buttons," meaning that they have given 1 per cent of their annual income—a recommended pattern for executives. For others, a day's pay has been suggested.

On behalf of the Jewish Welfare Fund of Chicago, Samuel A. Goldsmith pointed out that for every $8.00 cut out of the fund one person without means

FORM 160
ALPHADUCT
SEMI-RIGID JUMPER WIRE
TESTED 5 WAYS FOR BUILT-IN QUALITY
DESIGNED All Alphaduct Semi-Rigid Jumper Wire for use as Jumper, Distributing Frame, and Cross Connecting wires, is insulated with a semi-rigid thermoplastic compound that just can't be beaten. Designed by Alphaduct specialists, this uniform high-grade plastic will not support combustion, is non-oxidizing, resistant to most oils and chemicals and is highly abrasion resistant.
GUARANTEED We guarantee it because Alphaduct rigorously tests these wires 5 ways for: compression • shrink back • heat shock • cold bend • flame resistance... to insure you products with that Alphaduct built-in quality.
SPECIFY When you specify Alphaduct Semi-Rigid Jumper Wire, or any one of Alphaduct's different types of telephone wire—you buy the know-how of the recognized leader in the manufacture of insulated wires for the Independent Telephone Industry.
ALPHADUCT
WIRE AND CABLE CO.
NEW BRUNSWICK, N. J.
CHarter 9-8090
National Distributors: Automatic Electric Sales Corp., Northlake, Ill. • Leich Sales Corp., 427 W. Randolph St., Chicago, Ill. Regional Distributors: Buckeye Telephone & Supply Co., Columbus, Ohio • The Lindsay Telephone Supply Co., Cleveland, Ohio • Pankey Supply Co., Charlottesville, Va.

GENERAL MACHINE PRODUCTS COMPANY, INC.

Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.



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PRESSURE TESTING KIT

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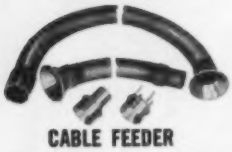
COMPOUND



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For Every Application

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TYPE 167

Specifically designed for direct earth burial by trenching equipment and ordinary methods as well as aerial and duct service.

Conforms to REA Specification PE-23.

Available in No. 19, 22, 24 and 26 AWG from 6 to 400 pairs.

Fully color coded with all pairs guaranteed.

Inner polyethylene jacket for mechanical and electrical protection.

Longitudinal copper shield corrugated on large diameter cables for flexibility.

5 mil copper tape on standard cable.

10 mil copper tape on gopher protected cables.

Black polyethylene outer sheath.

THE PLASTIC WIRE & CABLE CORPORATION
JEWETT CITY, CONN.

would be denied a clinic visit to such important city hospitals as Michael Reese or Mt. Sinai. There is now a waiting list at both hospitals for sick old people who cannot be taken for lack of funds. For every $5,000 cut out of the fund, a social worker must be dropped. For every $15,000 cut out, a doctor must be dropped.

Msgr. Vincent W. Cooke, for the Catholic Charities of the Archdiocese of Chicago, testified that 15 out of the 89 organizations would be curtailed if the joint appeal goal were not achieved. These Catholic charities are particularly active in the area of child care, but also include homes for the aged; schools for the deaf and blind; and guidance. What would happen if Catholic Charities were denied their requested $1,283,000? Msgr. Cooke stated:

"If the Community Fund were eliminated the effect on us would be drastic . . . the money is absolutely necessary and we would be required to take the money from reserves or more probably borrow this money. If unable to do this we would have only two choices: (1) To drop the services, or (2) go back to the corporations—who have a moral responsibility toward charity in the community—and ask for this financial assistance."

Importance of Charity to Business

One of the eye-openers in this controversy was the testimony by Leonard Spacek, managing partner of Arthur Andersen & Co. He showed that charitable donations, like the Biblical bread cast upon the water, *actually return benefits to corporate donors!* Here is a real argument for the Illinois Commerce Commission, and other regulators, to get their teeth into. For if corporate donations actually result in reducing other forms of operating expenditures, it would be foolish to discourage them.

Spacek testified that community-wide charitable donations generally reduce

What's Your Political I.Q. (Answers)

Give yourself one point for each correct answer. A perfect score qualifies you for the title, Senior Statesman; 13-17 points, Solid Citizen; 10-12 points, Ward Boss; 7-9, Part-time Patriot; under 7 points, Slacker. The correct answers are as follows. (1)—B; (2)—B; (3)—D; (4)—C; (5)—A; (6)—B; (7)—D; (8)—C; (9)—B; (10)—A; (11)—B; (12)—B; (13)—D; (14)—D; (15)—C; (16)—D; (17)—C; (18)—D.

public utilities' total cost of providing service to their consumers, as well as reducing the amount of welfare costs which are passed directly to consumers through local taxation. If charitable and civic needs of a community are fulfilled through corporate and other contributions to charitable organizations, the community becomes more vigorous and prosperous.

Spacek said that this enables further growth and development of the utility business. So the companies, employes, and customers ultimately benefit directly from corporate contributions. Utility companies' financial strength, and their ability to provide good service to their customers, is entirely dependent upon their over-all strength and prosperity within the communities they serve.

Spacek had still more to say along this line. If the social and welfare needs of many of the people served by these agencies are not met, there will be a general increase in vandalism. This would include Illinois Bell buildings and it would be costly. If Illinois Bell and other corporations in Illinois do not support these charities, they would receive complaints which would cost more to handle than the total contribution. In short, Spacek felt that Illinois Bell simply cannot stop charitable contributions. If it did, other large corporations would follow suit. This is a community effort and all companies must do their share.

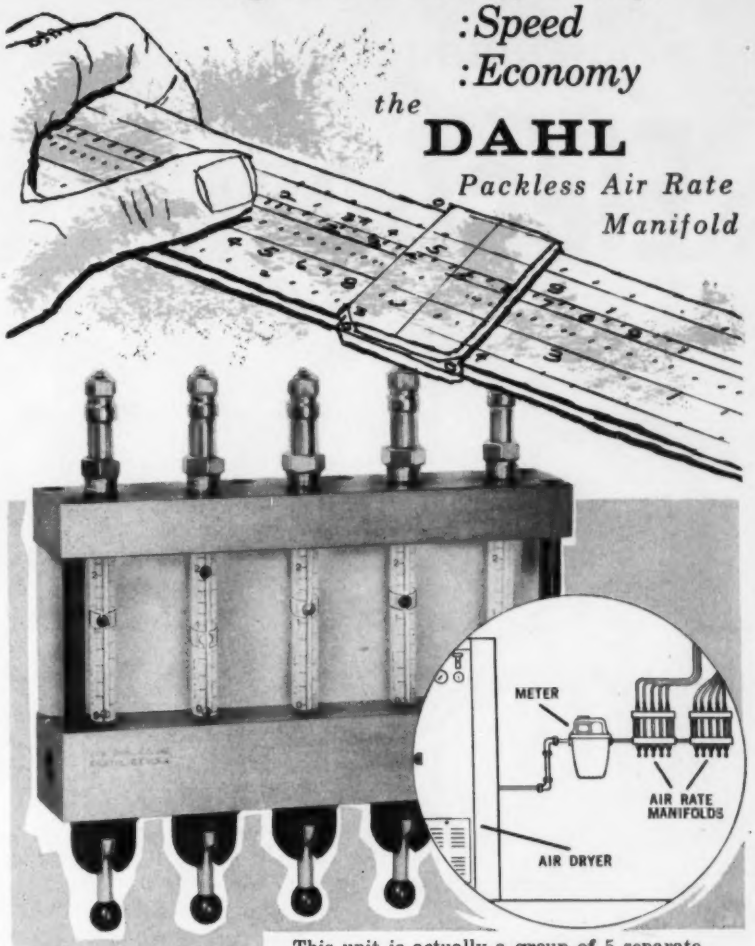
Other public utilities in other states and other regulatory commissions will surely be watching what the Illinois Commerce Commission will do in this case. The Illinois Bell Telephone Co. deserves the thanks of all charitable organizations for meeting the issue head-on, and putting on such a clear-cut case of placing the responsibility where it belongs—on the regulatory authority.

Will the commission, by its decision, close the door to the needy. Somebody has to bear the sweet cross of charity. The telephone company is willing. But this much is sure. It will be a heavier cross if the telephone company business is *denied* the privilege of bearing it. And it will be a heavier responsibility indeed for the regulatory authority whose ruling would result in the needy of Chicago being thrown on the mercy of unwilling taxpayers.

Wrong Compromise

"Do not consider anything for your interest which makes you break your word, quit your modesty, or inclines you to any practice which will not bear the light, or look the world in the face." —MARCUS ANTONIUS.

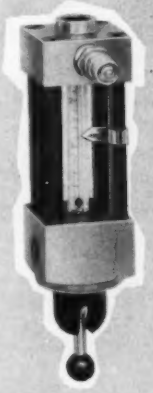
Designed for :*Efficiency*
:*Speed*
:*Economy*
the **DAHL**
Packless Air Rate Manifold



This unit is actually a group of 5 separate indicators ganged together into a single, compact unit which requires fewer connections than separate indicators would demand. Each indicator has its own toggle shut-off to provide a means of disconnecting the individual cable from the gas source without affecting the flow to other cables. A pressure testing valve is mounted in the upper block of each unit of the manifold to measure cable pressure or introduce an auxiliary supply of gas on a temporary basis.

The air rate manifold employs both a glass and a stainless steel indicator ball in each gauge. When gas flow exceeds the maximum rating of the lighter glass float (2½ SCFH), the stainless steel float rises giving accurate readings from 2½ to 7½ SCFH. Sliding reference pointers on each gauge give a fast visual check on day-to-day changes in flow rate for each system.

All connections are anodized 24 S-T aluminum.



Individual Air Rate Indicators also Available

CALL OR WRITE FOR CATALOG T-1
CLIFFORD 3-9500
86 TUPELO STREET, BRISTOL, RHODE ISLAND

GEORGE W. **DAHL** COMPANY INC

VALVES AND CONTROLS FOR COMMUNICATIONS, PROCESS, AIRCRAFT AND MARINE INDUSTRIES

new compact

Electronic Secretary*

only $220

F. O. B. WAUKESHA, WISCONSIN

now...you can lease an answering service to small offices and residential subscribers!

It's new! It's simplified! It's a compact, low-cost, Electronic Secretary telephone answering unit, specially designed for use in homes and small offices. Check these features. Then think of all the places you can lease this compact unit.

Outgoing message. Your subscriber records his own outgoing message (up to 13 seconds long).

Incoming messages. The unit records up to 12 incoming calls (13 seconds each). A beep tone indicates the start and end of recording time. The machine is automatically disconnected after the 12th call.

Low maintenance. The simplified operation of this unit insures dependable, trouble-free service.

For complete information about this new, compact answering unit—or any other Electronic Secretary Industries product—contact your distributor (listed below).

Electronic Secretary INDUSTRIES, INC.

Subsidiary of **GENERAL TELEPHONE & ELECTRONICS**

Distributed by **AUTOMATIC ELECTRIC SALES CORPORATION,** NORTHLAKE, ILLINOIS
LEICH SALES CORPORATION, 427 WEST RANDOLPH STREET, CHICAGO 6

answering unit

*

ELECTRONIC SECRETARY is a registered trademark of Electronic Secretary Industries, Inc.

HIGH *Loading*
CAPACITY—

Minimum
TORQUE!

with
this

MICROWAVE
TOWER
by

STAINLESS

Supporting this multiple repeater is one of several guyed towers recently built by Stainless for a large oil refining company. Note the design simplicity—for least wind loading—and the guy to tower attachments for *finite twist and sway!*

When your need is for a guyed or self-supporting tower—designed to any specs—let Stainless experienced engineering staff assist you.
Ask today for your free booklet describing many Stainless installations.

Ask today for your free booklet describing many Stainless installations.

Stainless, inc.
NORTH WALES • PENNSYLVANIA

Johnson Chief Engineer Of Warren, O. Company

Russell E. Johnson has been appointed assistant general manager and chief engineer of Warren Telephone Co. effective Nov. 16, according to an announcement by Ralph F. Mateer, president and general manager.

Mr. Johnson went to Warren Telephone Co. from his position as vice president of United States Instrument Corp., Charlottesville, Va.

Born in Wabash, Ind., he graduated from Central High School in Lima, O. and attended Ohio Northern University.

From 1942 to 1946 he served in the Army of the United States, reaching the rank of lieutenant colonel. During this tour of duty he was engaged in training tactical troops in signal communications; supervised the Tactical Communications of 15 corps U. S. Third and Seventh Armies, serving as executive officer and battalion commander; and supervised the engineering, construction and maintenance of civil and military communications in the Exchange and Toll Center at Salzburg, Austria.

His business career has been in chemistry, power and telephone engineering with the Suburban Light &

R. E. JOHNSON

Power Co.; Western Electric Co.; Gustav Hirsch Organization; United States Department of Justice; Kellogg Switchboard & Supply Co.; Lorain Products Co. and United States Instrument Corp.

During the period from 1946 to 1957 while employed by Gustav Hirsch Organization as chief telephone engineer, Mr. Johnson supervised all central office installation work of that organization

Earl Morse (right), manager of Colorado Springs District of the Mountain States Telephone & Telegraph Co., Denver, Colo., is shown pointing out the heart of the company's network serving NORAD units throughout the nation. Looking on is Morris A. Esmiol, president of the Sachs Foundation and of the Three Eagles Co. of Colorado Springs. The two men were among eight Colorado guests of the Air Force on a flight from Colorado Springs to Tyndall Air Force Base, Panama City, Fla., where Air Defense Command staged its huge annual World-Wide Weapons Meet Oct. 13-24. Mr. Morse and Mr. Esmiol are shown in front of the Bell Telephone System display.

in the United States, Greenland, Alaska, the Bahamas, the Virgin Islands and in Liberia, Africa.

During this period he supervised the engineering and installation of the dial system for the Warren Telephone Co. as well as a 40-position toll board, a carrier system, several sub-exchanges, operator toll dialing and customer direct distance dialing on a nation-wide basis.

Mr. Johnson is a registered professional engineer in Ohio.

J. A. Putnam Manager of U. S. I. Atlanta Office

John A. Putnam has been appointed manager of the Atlanta office of U. S. Industrial Chemicals Co., division of National Distillers & Chemical Corp. The announcement was made by A. R. Ludlow Jr., vice president in charge of sales.

J. A. PUTNAM

Mr. Putnam has been a salesman operating out of the U.S.I. New Orleans sales division since 1952 and has been located in Atlanta for the past two years.

He received his college training at the University of Michigan and served with the U. S. Army from 1945 through 1947.

IT&T Bavaria Factory

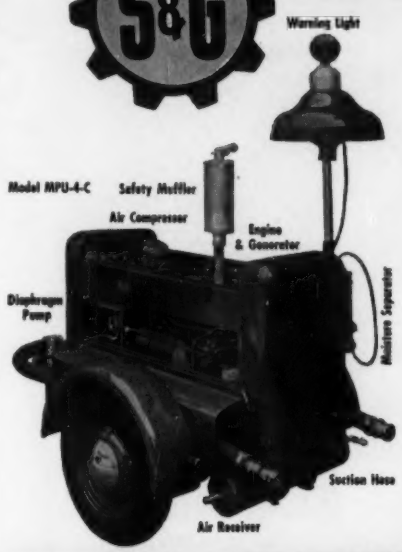
Standard Elektrik Lorenz A. G., an International Telephone & Telegraph Co. subsidiary, has acquired a site in Gunzenhausen, Bavaria, for manufacturing telecommunications equipment.

Individual's Hazards

"It is an easy and vulgar thing to please the mob, and not a very arduous task to astonish them; but essentially to benefit and to improve them is a work fraught with difficulty, and teeming with danger."—COLTON.

dependable . . . versatile . . .

S&G Mobile Power Unit



- Generator (slow speed for quietness) 2500 Watt, 110-Volt DC
- Pump—2800 GPH Diaphragm to remove seepage and drain back
- Air Compressor—to put cables under pressure for cut-overs or repairs

Furnished with or without pump and compressor

- 300-Watt floodlight illuminates working area
- operates soldering pot and iron, electric and air tools
- electric blower to ventilate manhole
- supplies dry air for cable cut-overs, flash testing, etc.
- diaphragm pump can be operated from manhole by push button control
- buzzer signal for summoning helper
- light, easy to handle

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P. O. Box 1309 • New Orleans 10, La. • JAckson 5-3142

MEMORANDUM

TO: Company Managers

When you buy rebuilt products,
buy them where they were made!

For rebuilt TELEPHONES
SPRING JACKS
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CORD CIRCUIT EQUIPMENT
RELAY SPRING COMBINATIONS

and many other items rebuilt as good as new, go directly to KELLOGG!

These dependable Kellogg products have all been rebuilt with original factory parts, with the same service and inspection used on new equipment.

Kellogg Switchboard and Supply Company
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KLEIN

preferred by linemen ... electricians

The name Klein on leather goods is known and preferred by linemen and electricians everywhere. Klein tool belts, safety straps, pouches and pockets represent the highest in quality, the safest in design and construction.

In safety straps, Klein-Kord was the first specially woven fabric strap designed to permit the use of a tongue-type buckle without risk of slitting or ripping, even under severe strain.

Now Nylon Klein-Kord safety straps are the newest Klein development offering maximum safety with maximum flexibility. These are the only nylon straps designed to meet the tests given in Edison Electric Institute Report AP-2.

Free Tool Guide

A copy of the new Klein Pocket Tool Guide will be sent on request.

Foreign Distributor:

International Standard Electric Corp., N. Y.

Mathias KLEIN & Sons

Anderson Division Manager General Directory in Cal.

Allan M. Anderson has been appointed division manager of General Telephone Directory Co.'s San Francisco division, which encompasses the central and northern California areas.

A. M. ANDERSON

Mr. Anderson started with the General Telephone Directory Co. on May, 1947 as a sales representative.

He was appointed sales supervisor in 1950 and in 1956 was promoted to assistant division manager of the Long Beach Division.

In 1958 he was transferred to San Francisco to establish an office and continued to report to the Long Beach office until his recent appointment.

Reilly Tar & Chemical Adds Shipman As Representative

C. C. Shipman has joined Reilly Tar & Chemical Corp., Indianapolis, Ind., as a sales engineer with headquarters

C. C. SHIPMAN

at the Houston, Tex., office, it has been announced by P. C. Reilly, president.

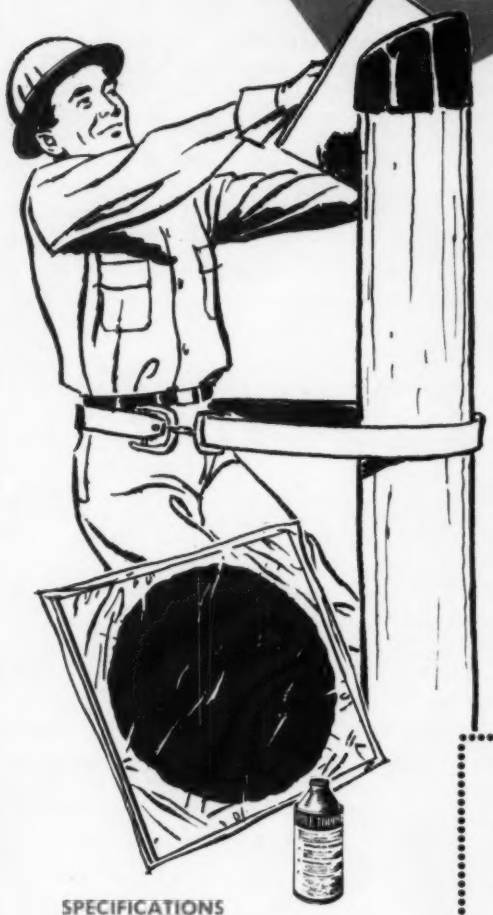
Mr. Shipman will represent the com-

Centenarian A. Philetus Luse, at 106 years of age, the oldest resident of Sussex County, New Jersey, enjoyed the honor of being the first to make a DDD call through United Telephone Co. of New Jersey's new system at Newton, N. J. With a sage sense for telephonic publicity, Mr. Luse dialed his grandson, Andrew P. Luse, a supervisory accountant for the American Telephone & Telegraph Co., in New York City. Two great grandchildren, Andrea, 16, and Richard Luse, 12, shared the happy occasion. A pleased witness to the history-making call was William Theurer, United Telephone Co. general manager.

For LONG-LASTING POLE TOP PROTECTION

Osmose®

POLE TOPPER . . . . . ONLY $1.00 EACH



- **A simple do-it-yourself unit**
- **Applied in only One Minute**
- **Lightweight, Easy to Carry**
- **Durable, will not crack or peel**
- **Neat, Attractive, Fits Snug**

Here's the only sure method to give positive pole top protection . . . and for only $1.00 each. Ten years of continuous research produced POLE TOPPER. Results indicate it will add up to 20 years of extra "top life". Keep a carton of 12 on every line truck as standard equipment so one can be applied as routine whenever a man is working near the top of a pole. Takes only a minute to apply. For use on new and salvage poles in the yard as well as standing poles. Your most economical insurance against Roof Decay and Weathering. Many thousands now in use.

POLE TOPPER FLUID

A 10% penta preservative, recommended for application to roof area prior to installation of POLE TOPPER. Available in 12 oz. cans, @ $ .25 ea. One can sufficient for one pole roof.

SPECIFICATIONS

POLE TOPPER — A bituminous compound containing 5% penta with loose woven cloth and backed with a "throw-away" cardboard applicator. Each 15" diameter; weight 11 oz. Packed 12 to carton, 6" x 17" x 17". Shipping weight 18 lbs. Complete application instructions.

POLE TOPPER FLUID — 10% penta in 12 oz. cans. Packed 6 to a carton. Shipping weight 5 lbs. Use one can per pole.

SEND FOR TRIAL ORDER—TODAY

Osmose Wood Preserving Co. of America, Inc.
976 Ellicott St., Buffalo 9, N. Y.

*Please ship*____carton(s) of POLE TOPPERS @ $12.00 ea.
*also*____carton(s) of POLE TOPPER FLUID @ $1.50 ea.
all prices f.o.b. Buffalo, N. Y.

Name _____ Title_____

Firm _____

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City _____ Zone ____ State _____

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EXTRA HIGH-TENSILE
TELEPHONE LINE WIRE
for low-cost
Rural Lines

• Spans up to 600 feet in Heavy Loading, 650 feet in Medium Loading and 700 feet in Light Loading districts are possible where Crapo HTL-195 is employed. This extra long span construction results in marked savings in costs per mile of line. Pole structures can be reduced to a minimum. Fewer pole structures mean substantial savings both in materials and man-hours of labor. There is less hauling to be done, fewer holes to dig, less material to be handled, installed and connected.

Improved electrical qualities make practical typical subscriber loops of 14 to 15 miles with normal voltages and equipment. Also can be used for subscriber carrier.

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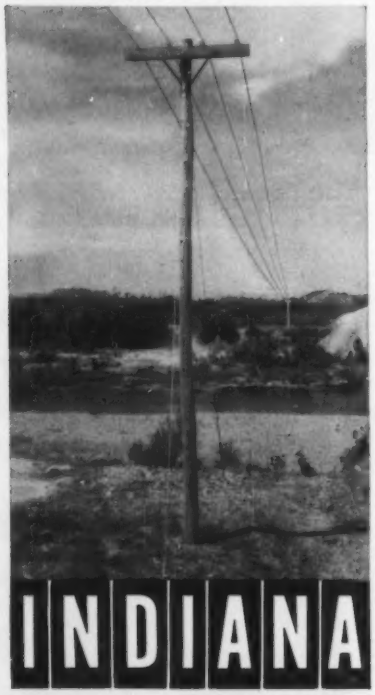

INDIANA
STEEL & WIRE CO., INC.
MUNCIE, INDIANA

pany in the sale of creosote oil in the Texas-Louisiana territory.

A native of Self, Tex., Mr. Shipman was graduated from East Texas State College in 1949 with a B.S. degree in chemistry and a M.S. in education.

Guardian Angel

"Round about what is, lies a whole mysterious world of what might be—a psychological romance of possibilities and things that do not happen. By going out a few minutes sooner or later, by stopping to speak with a friend at a corner, by meeting this man or that, or by turning down this street instead of the other, we may let slip some great occasion of good, or avoid some impending evil, by which the whole current of our lives would have been changed. There is no possible solution to the dark enigma but the one word "Providence."—LONGFELLOW.

WHEATSTONE BRIDGE MEASUREMENTS

Concluded from page 31

bridge ratio dial setting until the most accurate measurement is obtained. *Table 1* gives the best ratio dial setting for measuring resistances ranging from less than one to several million ohms.

An arrangement for supplying operating current from an outside source to the Wheatstone Bridge, shown in *Fig. 1*, is given in *Fig. 2*, where six 22.5-volt type "B" dry batteries are connected in series and wired to two switching keys placed between the batteries and the bridge "BA" binding posts.

With the "K1" key normal, current is furnished from one 22.5-volt battery. In order to obtain greater accuracy in the measurement of telephone line trouble, it is common practice to use a higher voltage, in which case the "K1" key is operated, thus increasing the battery EMF to 135 volts. Certain kinds of telephone line trouble measurements require transposing the bridge battery polarity, and are accomplished by operating the "K2" key.

(To Be Continued)

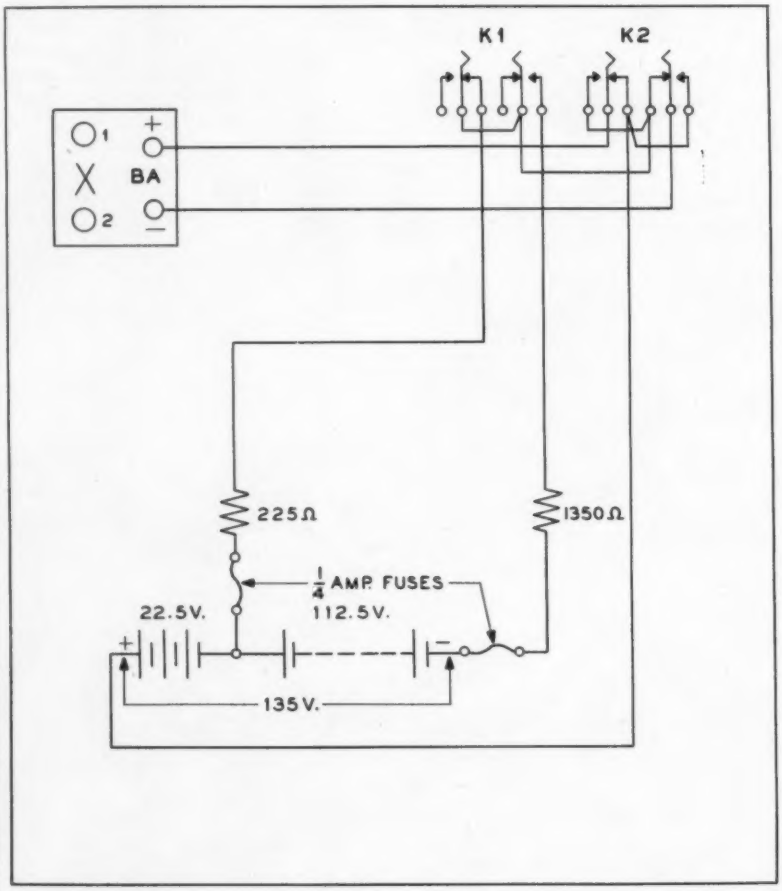

Fig. 2

BI-SEAL

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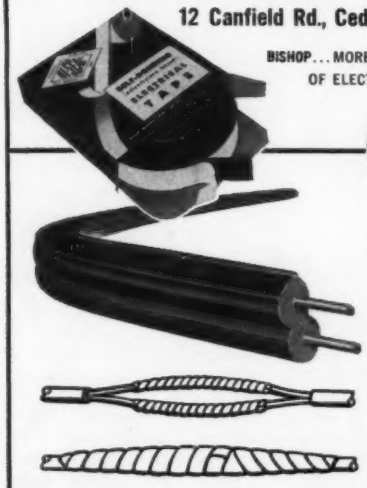

PARALLEL DROP WIRE SPLICE

- Wrap with a single half-lapped layer of Bi-Seal Type 2A
- Tension Tape approx. 3/4 original width. Extend tape 1/2" beyond sleeve
- Completed Splice
- Write for copies of Bi-Seal Splicing Methods, Specification BM-1

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when the heat's on!

Despite temperature extremes, you can depend on Kennecott lead-alloy sheathed cable to give perfect service! Its exclusive "Young Process" lead sheath and precision-wound tape insulation shrugs off heat damage that would greatly shorten the life of other types of insulation and sheathing. Proof of this is that Kennecott Telephone Cable lines have been giving superior service since 1897. Get full details from the Chase sales office near you.

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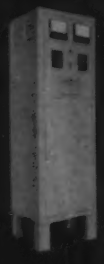

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ACME

Saves $16,000 by Reusing 50-year-old Ducts

Money is where you find it—and Southern New England (Bell) Telephone Co. has learned that unsuspected caches can be found right under city streets. The streets of Hartford, Conn. that is.

In May 1959, the company decided to cut into old underground fibre ducts installed over 50 years ago as power supply feeder ducts for a trolley car system. On excavating, it was discovered that the early conduits were still in excellent condition. And, by re-using the ducts—manufactured by Orangeburg Division of The Flintkote Co.—Southern New England was able to recable an 800-foot section as a connecting link between two new Orangeburg duct banks at a savings of $16,000.

In 1913, the Ley Construction Co. installed 3½ inch conduit under the streets of Hartford for the Trolley Car Co., now known as The Connecticut Co. Thirty-four years later, in 1947, when these lines were abandoned with the discontinuance of trolley service in that city, the Southern New England company purchased the then empty and unused ducts.

Orazio Sylvester (right), who was on the job in 1913 when the exposed ducts shown in the foreground were installed beneath the streets of Hartford, Conn., as power supply feeder ducts for a trolley car system Mr. Sylvester supervised the current excavating job, which revealed that the 50-year-old pipes were re-usable for the Southern New England (Bell) Telephone Co.

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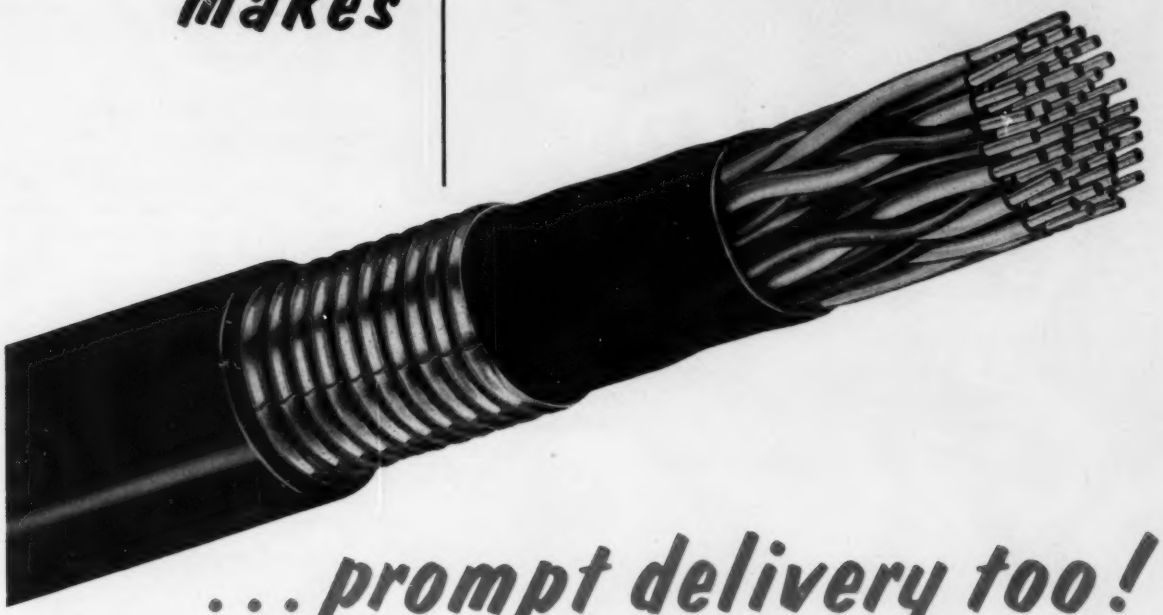

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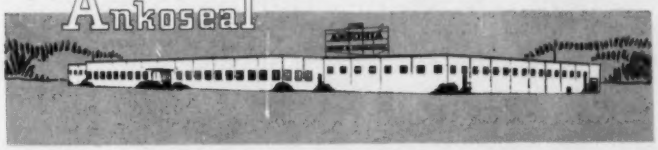

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Mr. and Mrs. Milton Staub are shown presenting a check to pay for the Gustav Hirsch memorial scholarship to John Connolly, vice chairman of the board of trustees of Alaska Methodist University. Mr. Staub (left) is president of the Gustav Hirsch Organization, Inc.

Gustav Hirsch Company Gives Alaskan Scholarship

The Gustav Hirsch Organization, Inc. has established a scholarship at Alaska Methodist University. The award has been named the Gustav Hirsch Memorial Scholarship, in memory of Gustav Hirsch, who founded the organization bearing his name in 1898.

The award will be made by the board of trustees of Alaska Methodist University each year to a student in electrical engineering—preferably a native Alaskan, or a student who has received his primary education in Alaska.

Choice of the recipient of the scholarship is left entirely in the hands of the Alaska Methodist University trustees.

Serious consideration for the award of the first scholarship is being given to a native Alaskan student who, during the winter months of his high school attendance, could use only a dog sled for transportation; and, who, during the entire four years, was never late for his classes.

Stromberg Transfers Fairly To Representative in Iowa

The transfer of J. E. Fairly, sales representative for Stromberg-Carlson's Telecommunication Division, to the Iowa territory has been announced by T. C. Thompson, general sales manager.

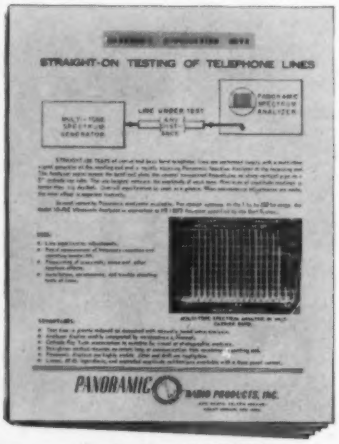
Mr. Fairly formerly served Independent telephone companies in the Arkansas and Louisiana territories. In his new position he will report to W. J. Pfaender, Chicago branch manager.

Within a year after joining Stromberg-Carlson as an installer in 1953, Mr. Fairly was made installation foreman. Thirteen months later he was appointed to the position of sales representative.

J. E. FAIRLY

Born in Long Beach, Cal., he attended school in Lubbock, Tex., and received further education at Texas Technical College. During his four-year Navy service he was an instructor in the instrument flight school, and he still holds a commercial pilot's license.

(Continued on page 80)



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Mr. Fairly comes from a family background closely associated with the telephone industry. He had previous experience with the present General Telephone Co. of the Southwest. His brother, R. Fred Fairly, also is serving with Stromberg-Carlson as sales manager of the Kansas City branch.

Van Zandt Named President American C. of C. in Japan

Howard F. Van Zandt, Far Eastern representative of the International Standard Electric Corp., subsidiary of International Telephone & Telegraph Corp., recently was elected president of the American Chamber of Commerce in Japan, and invested with the office by Ambassador Douglas MacArthur II.

H. F. VAN ZANDT

Mr. Van Zandt represents the American and foreign manufacturing, research and development divisions of ITT, in the Far East. His Tokyo offices are in the Nippon Electric Co., Ltd. building, Nippon being one of two ITT associate licensee companies.

He spent five years in Nippon as traffic advisor with the Civil Communications Section on General MacArthur's staff after the war, and aided the Japanese Ministry of Telecommunications in solving many reconstruction problems arising out of wartime devastation.

In the United States, Mr. Van Zandt served as a telephone consultant (having been an executive with the Southwestern Bell Telephone Co. in Oklahoma), as a lecturer and writer on Japan, and as assistant sales manager for Kellogg.

He was named assistant vice president of International Standard Electric Co. in February, 1956, and in May of the same year, was transferred to Tokyo.

The author of many magazine articles, Van Zandt wrote a series of seven articles for TELEPHONY early in 1951, under the title, "Japan's Recovery and Telephone Service."

Stromberg Appoints Phelan Market Research Analyst

Richard J. Phelan has been named market research analyst for Stromberg-Carlson's Telecommunication Division. The announcement was made on Nov. 9 by Charles F. Cheney, marketing research manager. Stromberg-Carlson is a division of General Dynamics Corp.

Mr. Phelan will plan and organize market research studies that will determine parameters of various market segments in the telephone industry. Through contacts with key personnel in telephone operating companies, an evaluation will be made not only of present products offered by Stromberg-Carlson and other manufacturers, but also of conceptually new market-product ideas. Information thus collected will be translated in terms of product design specifications to meet customer demand.

R. J. PHELAN

Mr. Phelan was born in Rockford, Ill., and attended public schools there. In 1950 he was awarded a B. S. degree in business administration from Marquette University. His major was marketing.

After graduation, he was employed as a sales statistician at the A. B. Chance Co. In 1955 he moved to R. T. French Co. as a market research assistant. Three years later he joined

Stromberg-Carlson as assistant to the director of plans and programs.

Mr. Phelan served two years as a sonar technician in the U. S. Navy. He holds membership in the American Marketing Association.

Preformed Announces Three Personnel Advancements

Three personnel advancements at the Preformed Line Products Co. are announced by Edmund H. Brown, vice president-sales, as follows:

Max A. Lekson, to manager, telephone products sales, with headquarters at 5349 St. Clair Avenue, Cleveland, O.

M. A. LEKSON

Mr. Lekson will also serve as manager, special industry sales, supervising the introduction of Preformed products into industries other than power and communications.

Kenneth R. Miller, to district manager

K. R. MILLER

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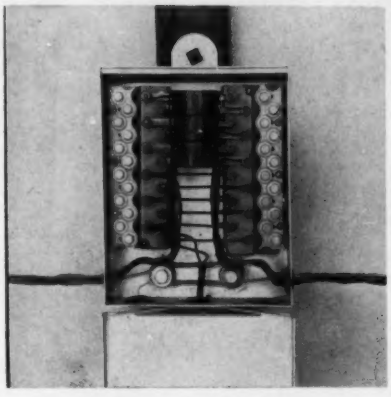
Type 177
TERMINAL LOADING CASE



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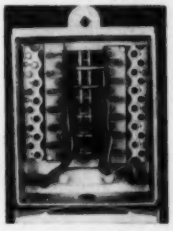

Contains two protected terminal strips complete with type 637A(88MH) or 637 B (44MH) coils.

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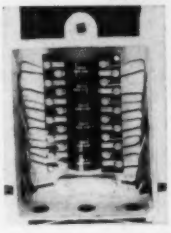
Contains one protected terminal strip —no coils.

Types 177C-177D



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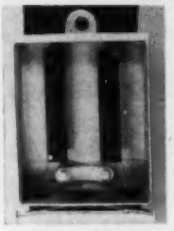
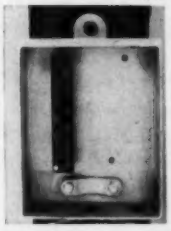


Contains two non protected strips — no coils.

Types 177E

Contains two protected terminal strips—no coils.

Type 177H



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F. J. LEKSON

of sales—Western Area, with headquarters in the Preformed plant at 600 Hansen Way, Palo Alto, Calif. Mr. Miller will coordinate sales and service west of the Mississippi River.

And Fred J. Lekson, to district manager of sales—Eastern Area. He will coordinate sales in the New England and Atlantic states. At present, Mr. Lekson is operating from Cleveland but will soon establish headquarters in the east.

All three appointments were effective Nov. 1.

Automatic Elects Shanahan Vice President — Finance

Martin F. Shanahan, who was formerly controller, has been elected vice president-finance of Automatic Electric Co. and the telephone manufacturing and sales subsidiaries of General Telephone & Electronics Corp.

M. F. SHANAHAN

He succeeds John J. Douglas who has been named president of Lenkurt Electric Co.

Mr. Shanahan joined the company in 1948 as an auditor. He was elected controller in 1955.

Prior to his association with Automatic Electric, he served as an audit manager for Arthur Andersen & Co. of Chicago. He is a graduate of Chicago's Loyola University.

John S. Flannery, who has been assistant controller, was elected controller to succeed Mr. Shanahan.

A Picture's Worth

"Every once in awhile someone takes a crack at trying to come up with a word picture of the size of the national debt that can be imagined. Latest one is by Rep. Minshall (R., O.). 'One million dollars is a stack of $1,000 bills approximately 4 inches high; one billion is a stack of bills 333 feet high.' To illustrate the national debt—you'd need a stack of bills more than 18 miles high. We haven't checked the figures, but what's one mile more or less."—Detroit (Mich.) *Detroiter.*

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Index to ADVERTISERS

	Page
Acme Electric Corporation	76
Acme Visible Records, Inc.	—
Advanced Communications Engineering	82
Airtronics International Corp.	—
Alphaduct Wire & Cable Co., The	65
Altec Lansing Corp.	—
Aluminum Company of America	2-3
American Chain & Cable Co., Inc. Page Steel & Wire Div.	—
American Creosoting Corporation	—
American Electrical Heater Co.	60
American Steel & Wire Co.	—
American Telephone & Telegraph Co.	52-53
Anaconda Wire & Cable Co.	14-15
Ansonia Wire & Cable Co., The	77
Arps Corporation	—
Atlantic Creosoting Co., The	83
Auburn Machine Works, Inc.	—
Automatic Electric Sales Corp.	12-13, 44-45, 68-69
Avnet Electronics Corp.	—
Baker Wood Division	—
Barber Advertising Specialties, Walt	—
Barber-Greene	—
Bartlett Tree Experts	—
Bell Telephone Laboratories, Inc.	—
Benner-Nawman, Inc.	—
Bethlehem Steel Co.	—
Berry & Co., L. M.	—
Bishop Manufacturing Corp.	75
Bohnsack Equip. Co.	—
British Insulated Callenders' Cables, Ltd.	—
Brown Mfg. Co.	—
Buchart Associates	82
Budelman Electronics Corporation	—
Buckeye Telephone & Supply Co.	84
Burgess-Manning Company	—
Burroughs Corp.	—
Butler Manufacturing Co.	—
B. Y. Dial Service	—
C&D Batteries, Inc.	61
Cabaniss-Pogue Co.	83
Cable Construction Co.	83
Cable Spinning Equipment Co.	76
Calculagraph Company	—
Chance Co., A. B.	—
Charles Machine Works, Inc.	—
Cleveland Inst. of Electronics	—
Clifton Appraisal Company	—
Collins Radio Co.	—
Colorado Fuel & Iron Co., The	—
Commercial Cord Company, Inc.	—
Communication Equipment & Engineering Co.	81
Cook Electric Company	28-29
Copperweld Steel Co.	16
Crane Inc., Carl C.	83
Cushman Motor Works, Inc.	—
Dahl Co., Inc., George W.	67
Dakota Engineering, Inc.	—
Dampp-Chaser, Inc.	—
Davis Construction Co.	—
Davis, Inc., Archie	83
Dial Haven, Inc.	—
Diamond Expansion Bolt Co.	—
Donnelley & Sons, R. R.	79
Dow Chemical Company	—
Duo-Safety Ladder Corp.	—
E. & C. Contracting Co.	83
E.T.A. Products Co. of America	—
Electric Specialty Co.	—
Everstick Anchor Co.	—
Exide Industrial Division— The Electric Storage Battery Co.	51
Fitchburg Engineering Corporation	—
Foley Construction Co., Robert E.	83
Gagne Enterprises, Inc.	63
General Cable Corporation	—
General Insulated Wire Works	—
General Machine Products Co., Inc.	66
General Telephone Directory Co.	Back Cover
Gladwin Plastics, Inc.	—
Goodrich Chemical Co., B. F., The	—
Gould-National Batteries, Inc.	—
Graybar Electric Co.	41
Haley & Co., R. G.	80
Hallamore Electronics Co.	25
Harris McBurney Company	82
Henkels & McCoy	82
Highway Trailer Company	—
Hirsch Organization Inc., Gustav.	—
Holan Corp.	35
Indiana Steel & Wire Co.	74
Irwin Auger Bit Co.	—
Jet Line Gun Company	—
Johns-Manville	—
Kearney Co., Jas. J.	—
Kellogg Switchboard & Supply Co.	10-11, 71
Kennecott Wire & Cable Div.	75
Keystone Steel & Wire Co.	—
Killoren Company	—
Klein & Sons, Mathias	72
Kleinschmidt	—
Koiled Kords, Inc.	—
Koppers Co., Inc. Wood Preserving Div.	83
Leich Sales Corporation	32-33
Lindsay Telephone Supply Co.	64
Line Equipment Sales	83
Lorain Products Corp., The	—
Magnolia Chemical Company, Inc.	—
Malleable Iron Fittings Co.	—
McCabe-Powers Body Company	—
McGrath Engineering, Inc.	83
Midwest Communications Service	83
Monsanto Chemical Co.	—
Morrison-Pelsue Co.	—
Mullen Construction Co.	83
Murphy Engineering Laboratories	—
Natco Corporation	—
National Pole & Treating Div.	—
National Standard Co.	43
National Telephone Supply Co.	—
Neubauer Mfg. Co.	—
Neuses, Inc., P. K.	—
North Electric Company	37, 38-39
Okonite Company, The	75
Onan & Sons, D. W.	—
Orangeburg Manufacturing Co., Inc.	—
Osmose Wood Preserving Co.	73
Outdoor Outfitters Inc.	—
Owens-Illinois	—
Page & Hill, Inc.	—
Panoramic Radio Products, Inc.	78
Phelps Dodge Copper Products Corp.	4-5
Philco Corporation Gov't & Industrial Div.	17
Plastic Wire & Cable Corp.	66
Porter Inc., H. K.	—
Preformed Line Products Co.	—
Puregas Equipment Corp.	47
Radio Frequency Labs, Inc.	—
Railway Communications, Inc.	—
Ramset Fastening System	—
Rawlplug Company, The	—
Raytheon Company	—
Recordak Corp.	—
Reichhold Chemicals, Inc.	—
Reliable Electric Company	—
Republic Creosoting Company	—
Rex Corporation, The	—
Reynolds Metals Co.	—
Rolatape, Inc.	—
Runzel Cord & Wire Co.	62
S & G Manufacturing Co.	71
Schauer Mfg. Co.	—
Seymour Smith & Son	—
Sherron Metallic Corp.	—
Siemens Edison Swan, Ltd.	—
Sierra Electronics Corp.	—
Sloan, Cook & Lowe Co.	83
Stainless, Inc.	70
Stampings, Inc.	56
Stewart Bros.	—
Stromberg-Carlson Co.	58-59
Studebaker Packard Corporation	7
Superior Cable Corporation	57
Suttle Equipment Corporation	—
Taylor-Colquitt Co., The	—
Telecommunications Consultants	83
Telectric Co.	85
T.E.I. Corp.	83
Tele-Muff Co.	80
Telkor, Inc.	—
Templeton, Kenly & Co.	—
Thornhill Publishing Co.	—
Transandean Associates, Inc.	—
Truck Equipment Company	—
Tudor & Yager, Inc.	83
United Electric Controls Co.	—
United States Independent Telephone Association	—
U. S. Industrial Chemicals Co.	55
United States Instrument Corp.	87
United States Motors Corp.	—
United States Steel Corp. American Steel & Wire Co.	—
Creosote Division	—
Universal Controls Corp.	—
Utility Service Co., Inc.	79
Utility Tool & Body Co.	—
Warren Mfg. Co., Inc., The	18
Weikel Line Company	83
Western Electric Co.	—
Whitney-Blake Co.	8-9
Williams Inspection Co., Inc., A. W.	83
Wiremold Co., The	—
Wyoming Valley Equipment Div.	—
York-Hoover Corporation	—

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